US011172712B2

(12) **United States Patent**
McHugh

(10) **Patent No.: US 11,172,712 B2**
(45) **Date of Patent: Nov. 16, 2021**

(54) **GARMENT EXTENDER**

(71) Applicant: **Michael Benjamin McHugh**, Pointe-Claire (CA)

(72) Inventor: **Michael Benjamin McHugh**, Pointe-Claire (CA)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 361 days.

(21) Appl. No.: **16/408,693**

(22) Filed: **May 10, 2019**

(65) **Prior Publication Data**

US 2019/0261702 A1 Aug. 29, 2019

Related U.S. Application Data

(63) Continuation-in-part of application No. 15/695,395, filed on Sep. 5, 2017, now Pat. No. 10,537,142.

(51) **Int. Cl.**

A41D 1/21	(2018.01)
A41D 15/00	(2006.01)
A44B 19/24	(2006.01)

(52) **U.S. Cl.**

CPC ***A41D 1/21*** (2018.01); ***A41D 15/00*** (2013.01); ***A44B 19/24*** (2013.01); *A41D 2300/322* (2013.01); *A41D 2400/482* (2013.01)

(58) **Field of Classification Search**

CPC A41D 3/00; A41D 13/0005; A41D 1/21; A41D 1/215; A41D 1/22; A41D 2400/82; A41D 2300/324; A44B 19/00; A44B 19/24; A44B 19/28; A44B 19/265; A44B 19/262

USPC 2/95, 2.17, 2.15, 100, 78.4

See application file for complete search history.

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Pictures taken by the applicant and provided in file "Exhibit_A.pdf" of two physical products that were known by the applicant at least as early as Dec. 2014 and Dec. 2019.

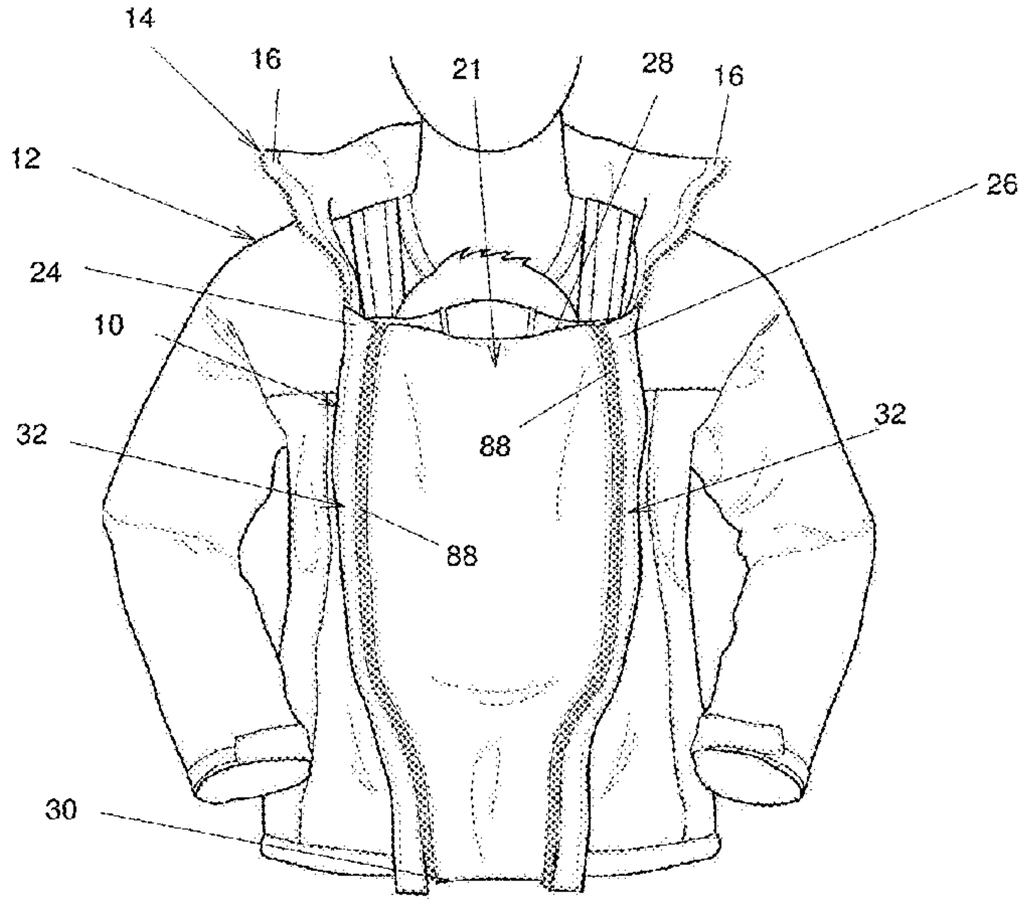
(Continued)

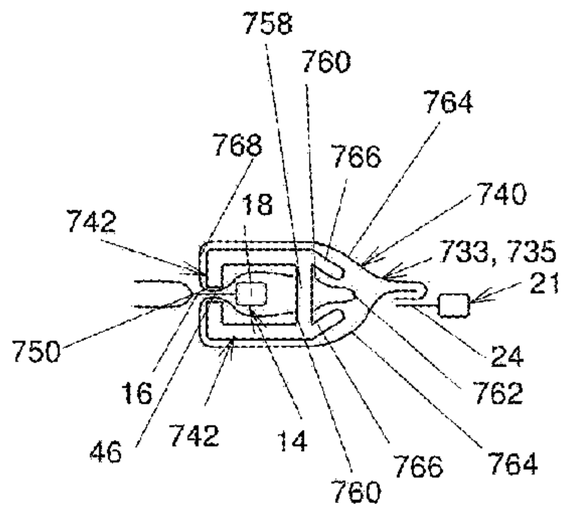
Primary Examiner — Timothy K Trieu

(57) **ABSTRACT**

A garment extender securable to a slide fastener of a garment. The garment extender includes an attachment at least partially covered by a foldable material.

21 Claims, 18 Drawing Sheets





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OTHER PUBLICATIONS

Pictures taken by the applicant and provided in file "Exhibit_A.pdf" of a physical product that was known by the applicant at least as early as Dec. 2014.

* cited by examiner

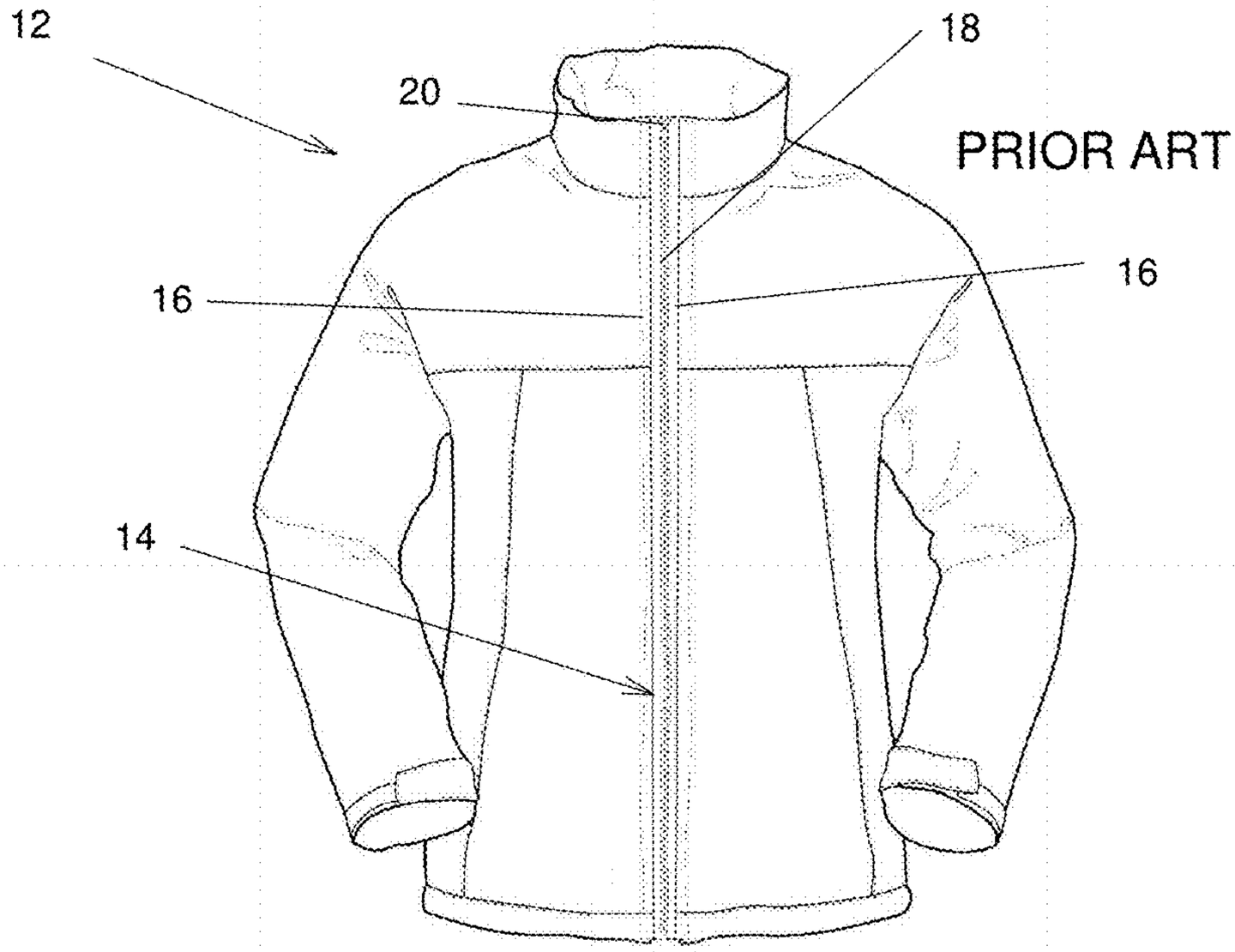


FIG. 1

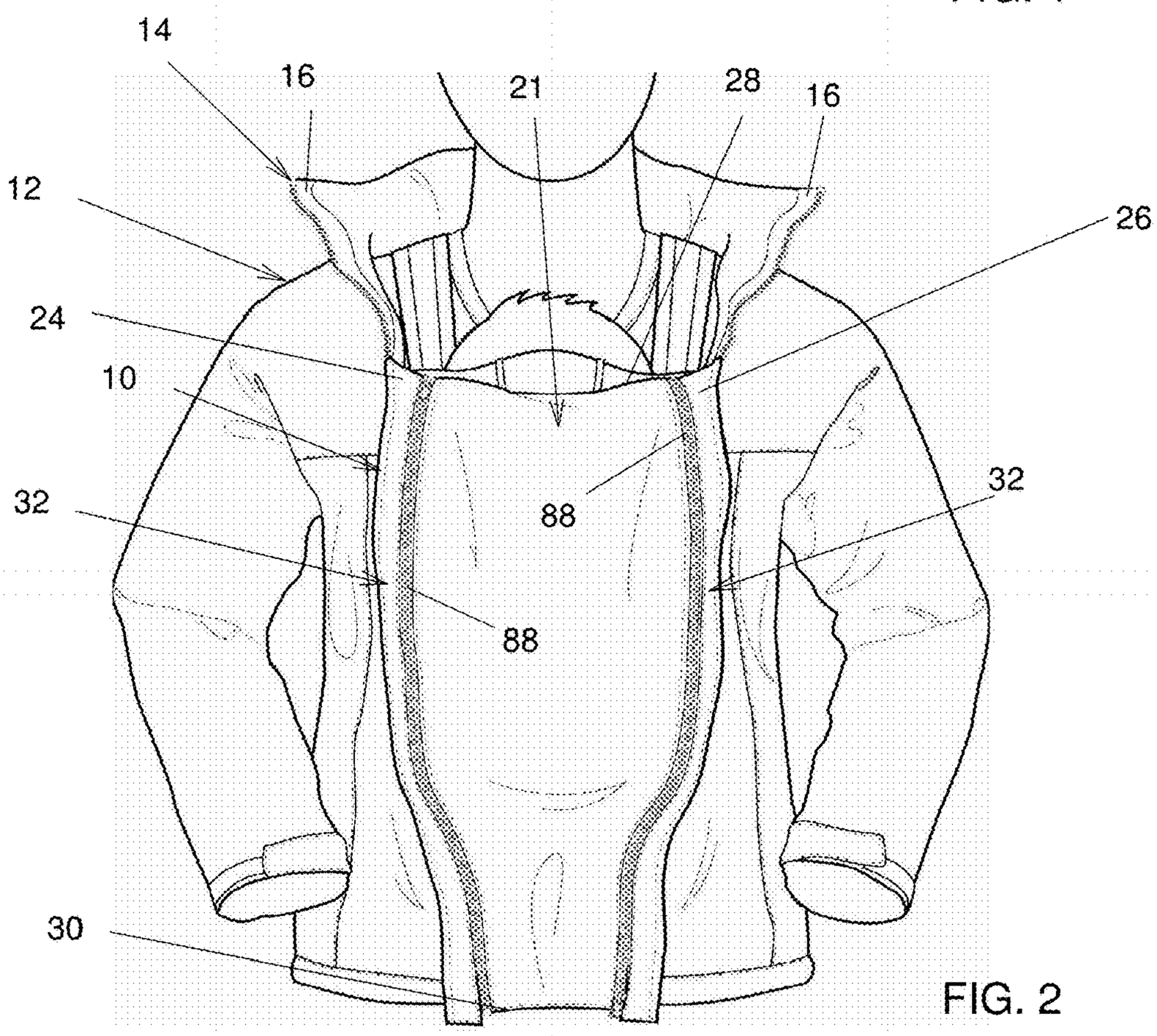


FIG. 2

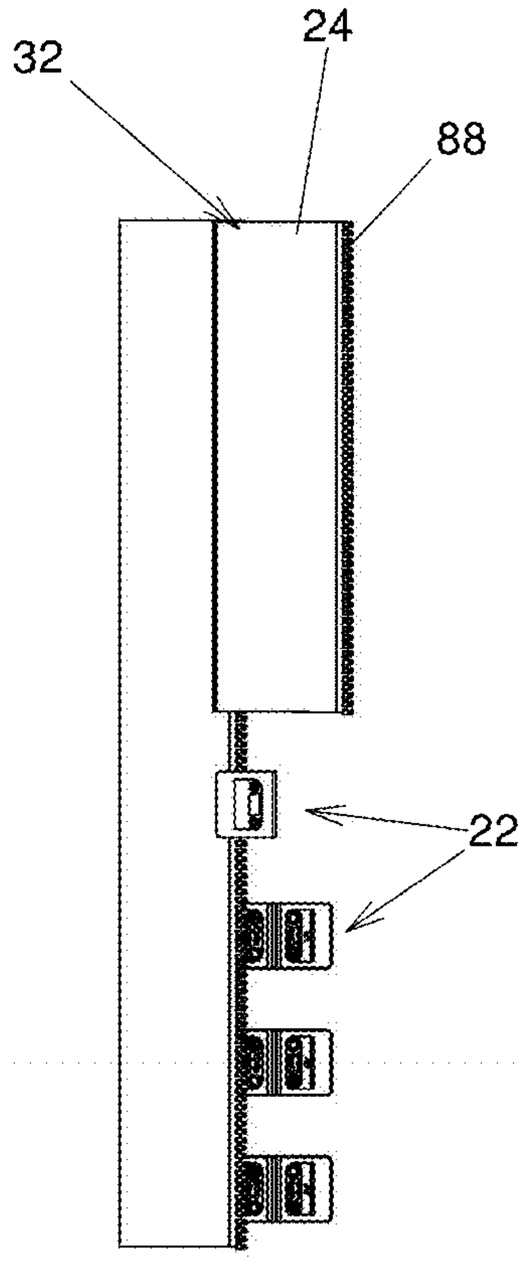


FIG. 3

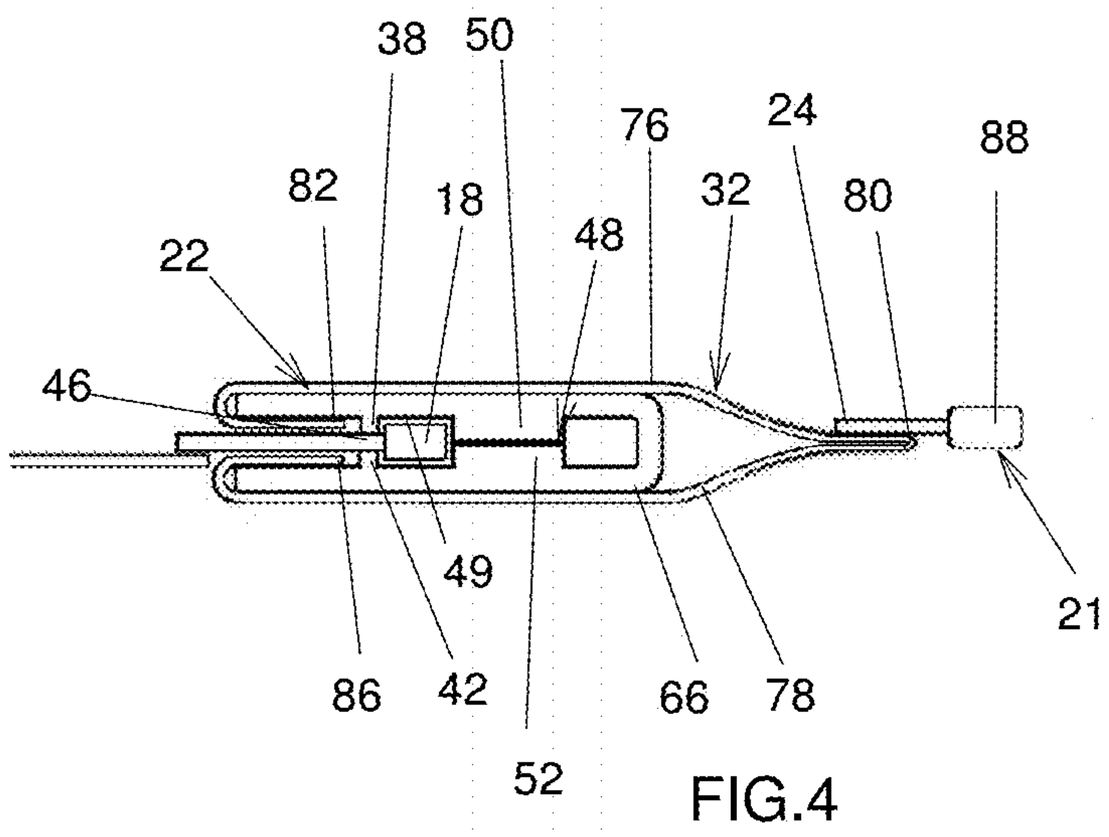


FIG.4

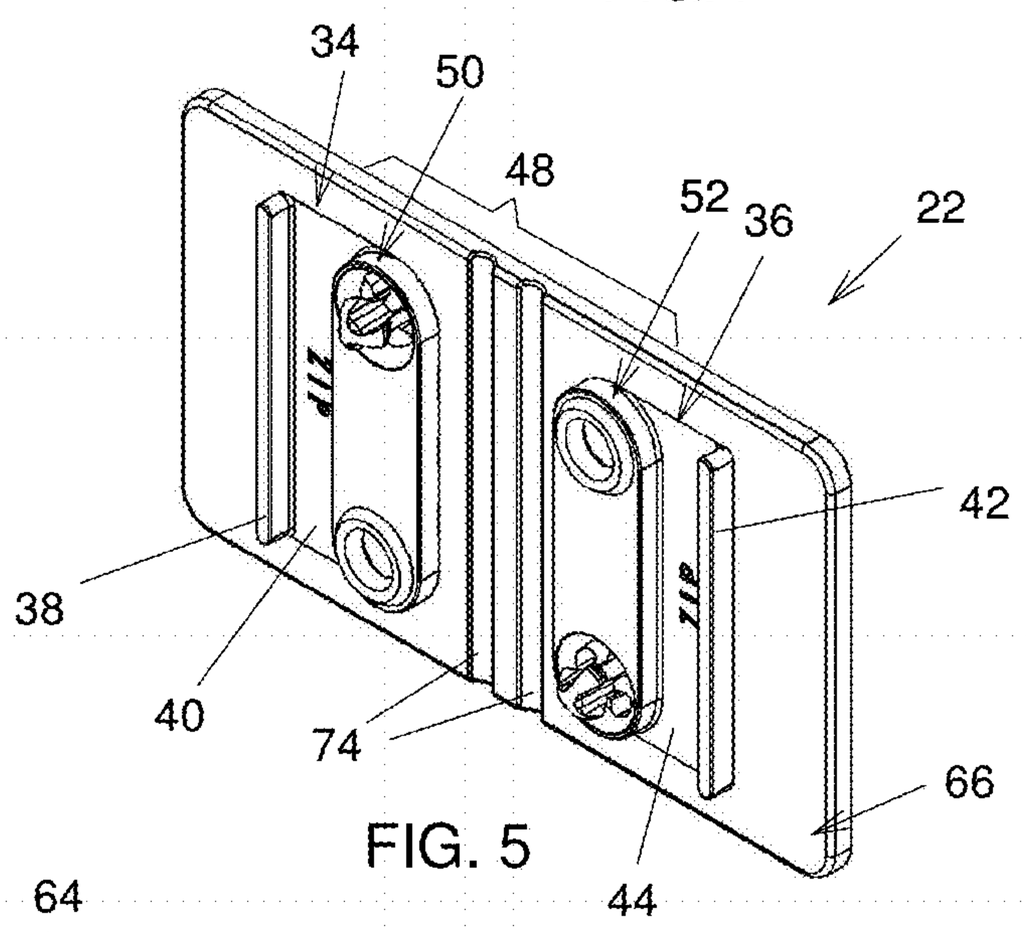


FIG. 5

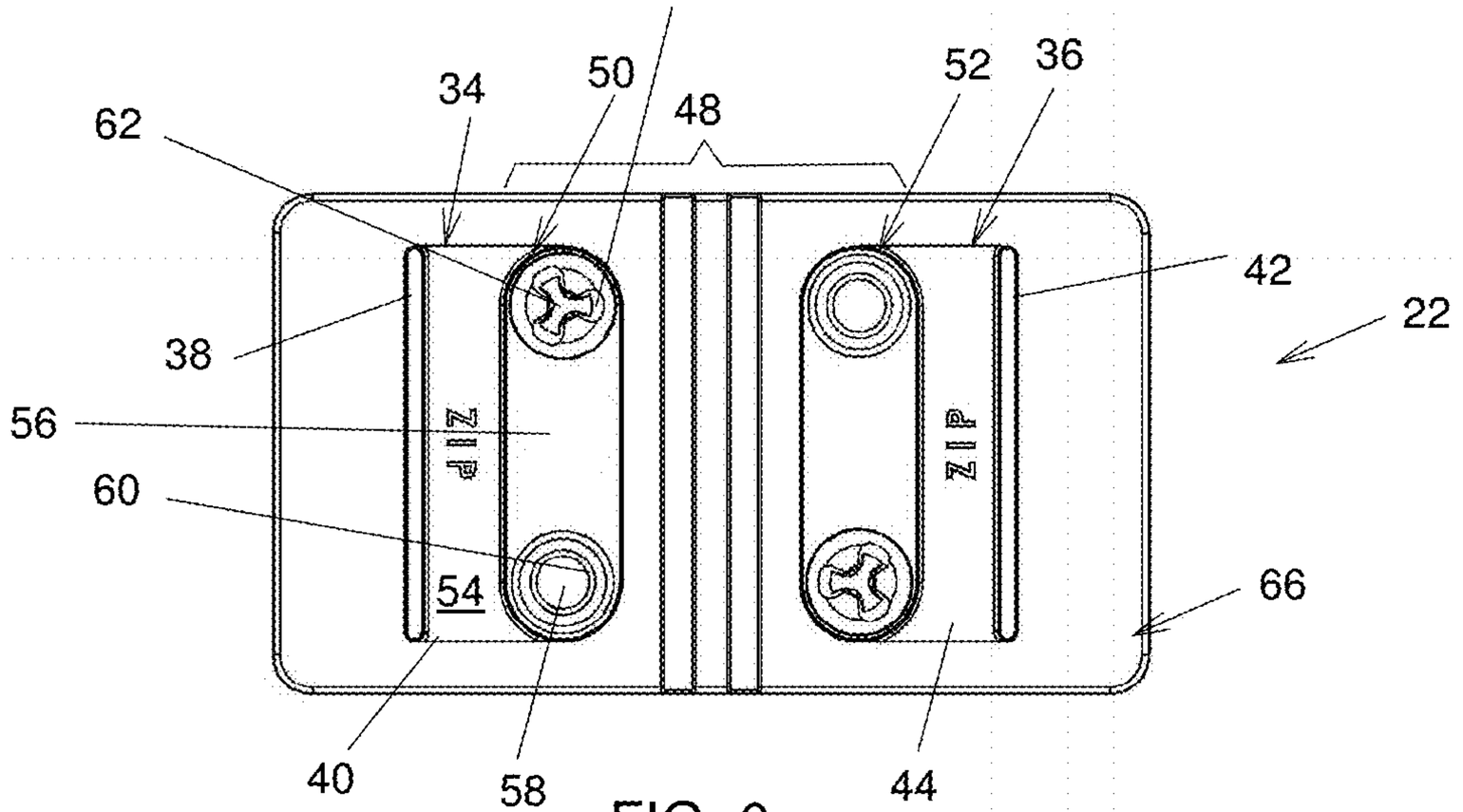


FIG. 6

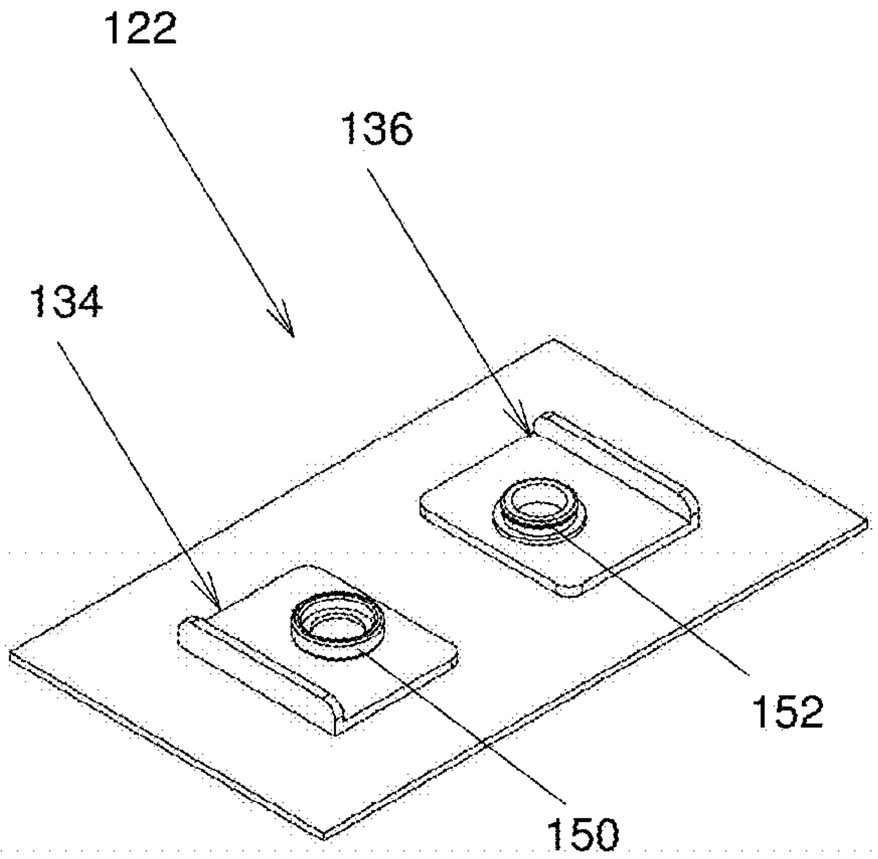
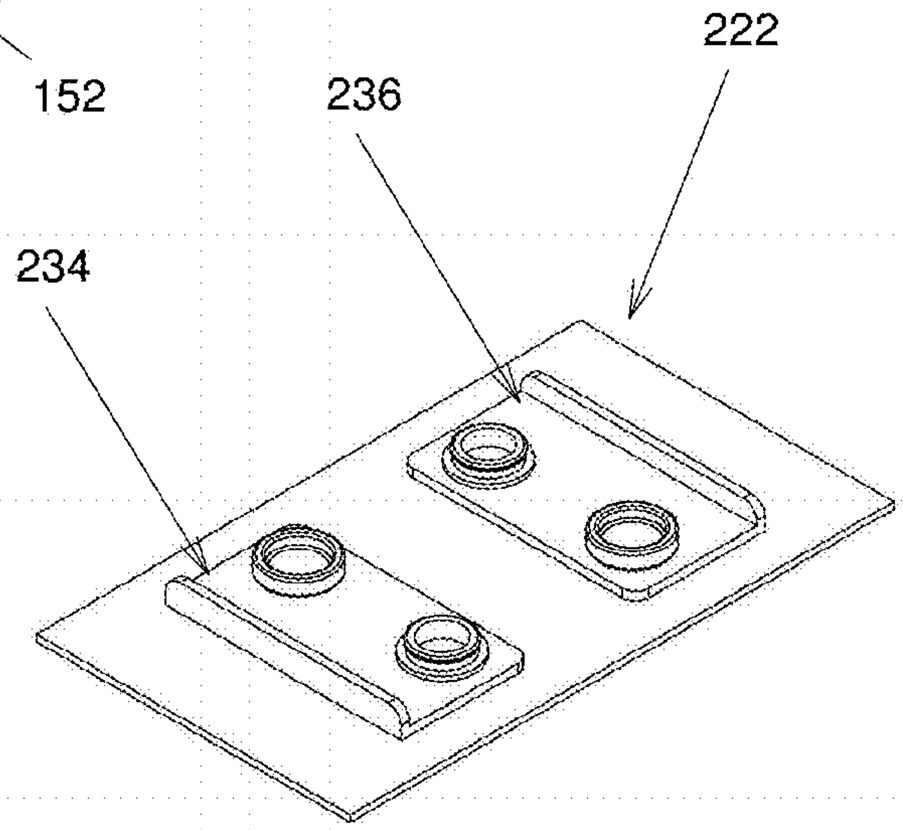


FIG.9



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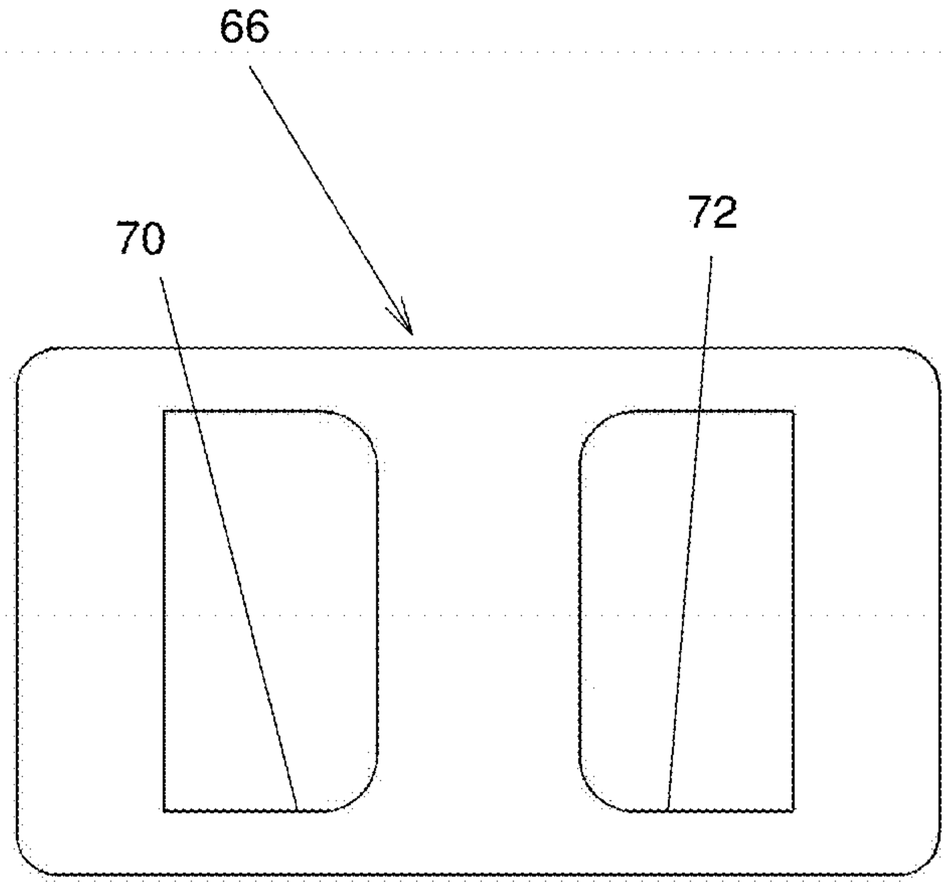
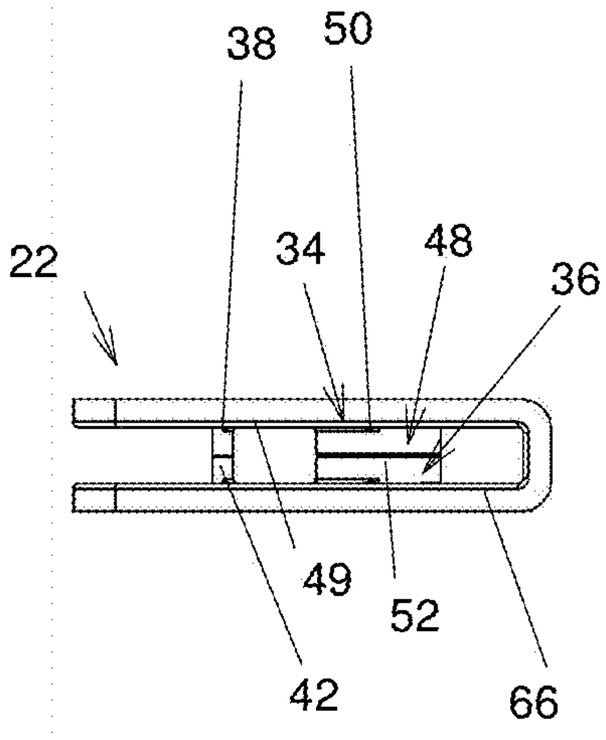


FIG. 7



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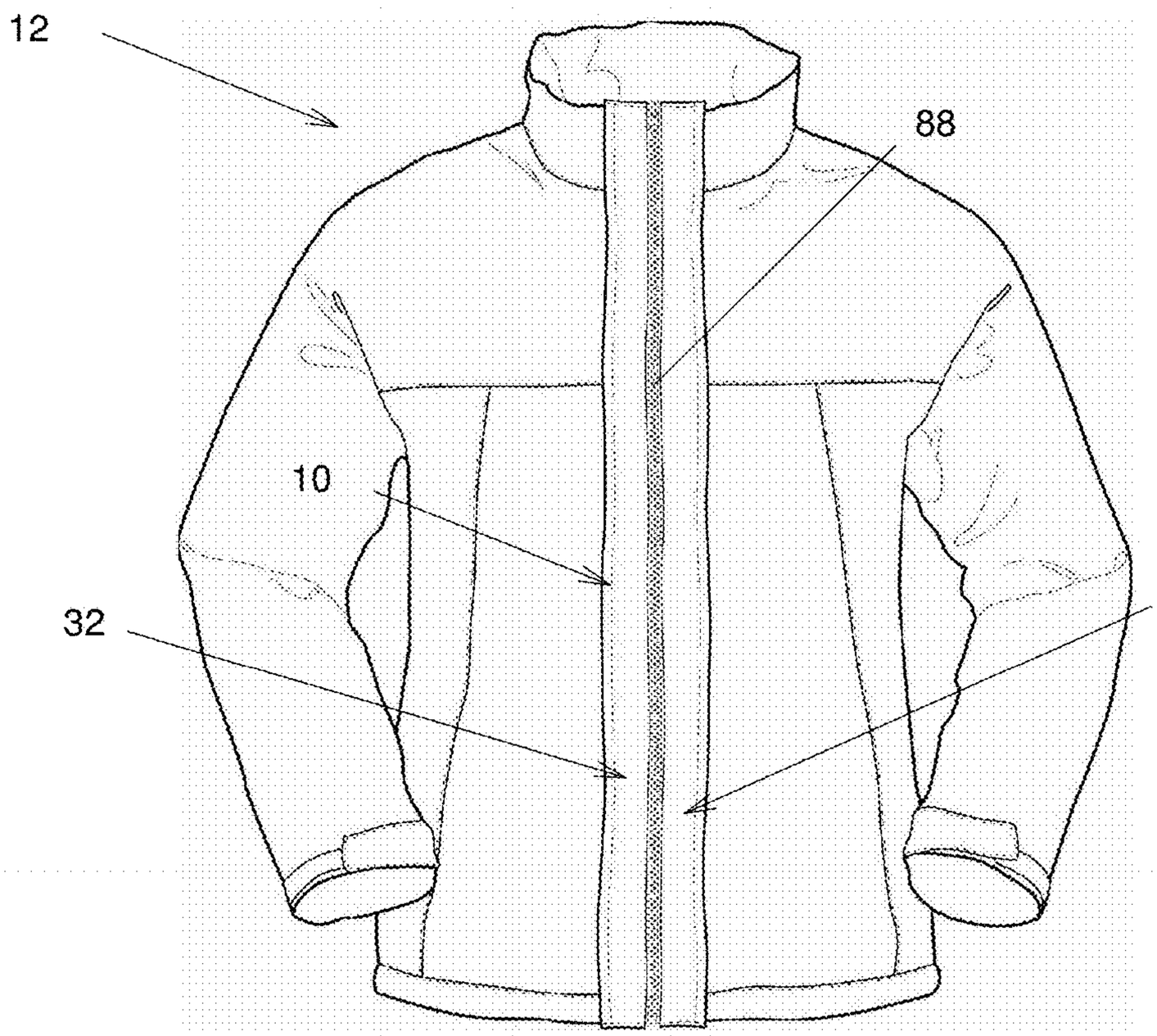

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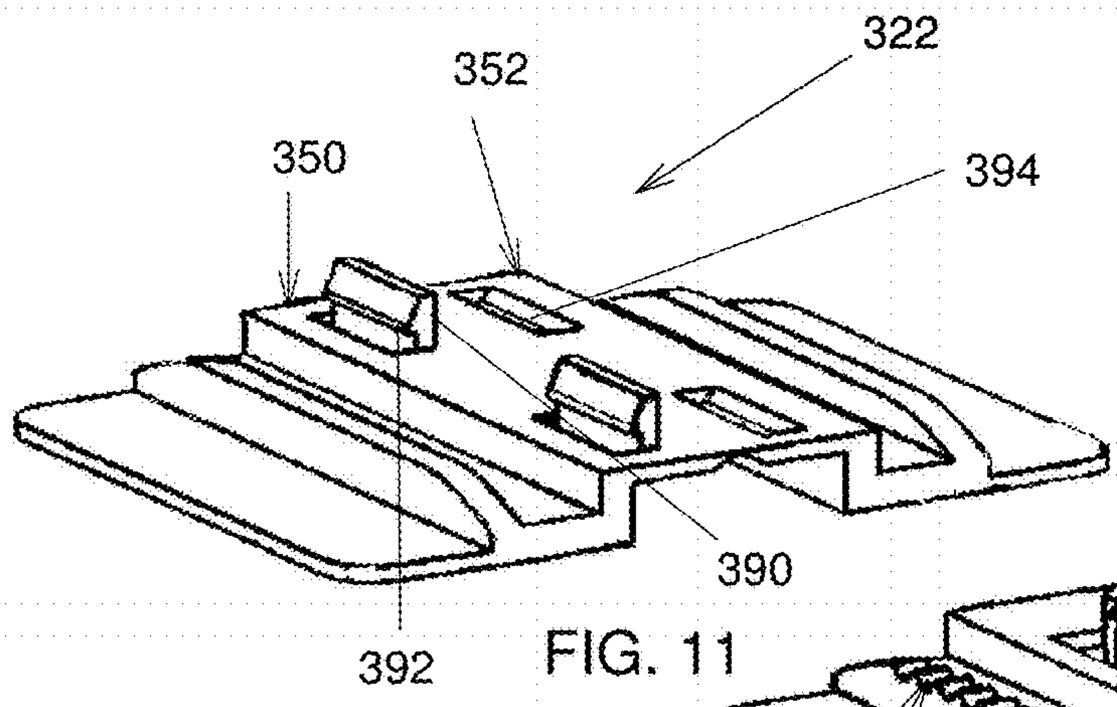

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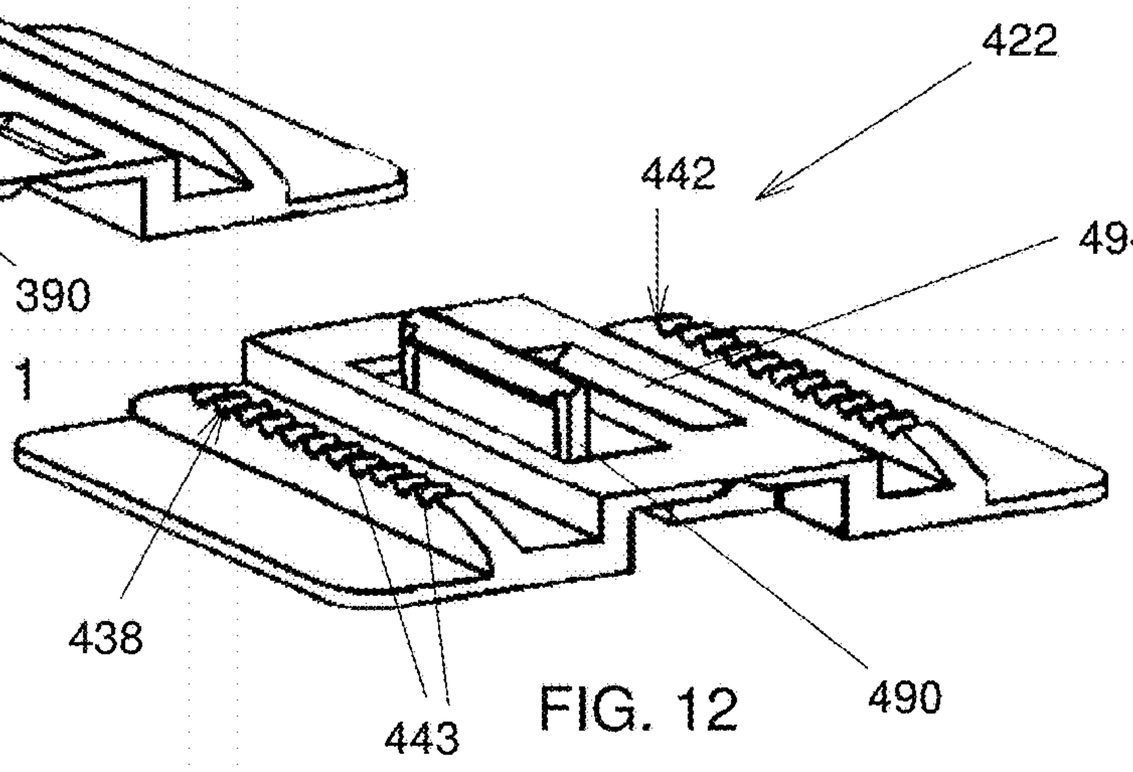
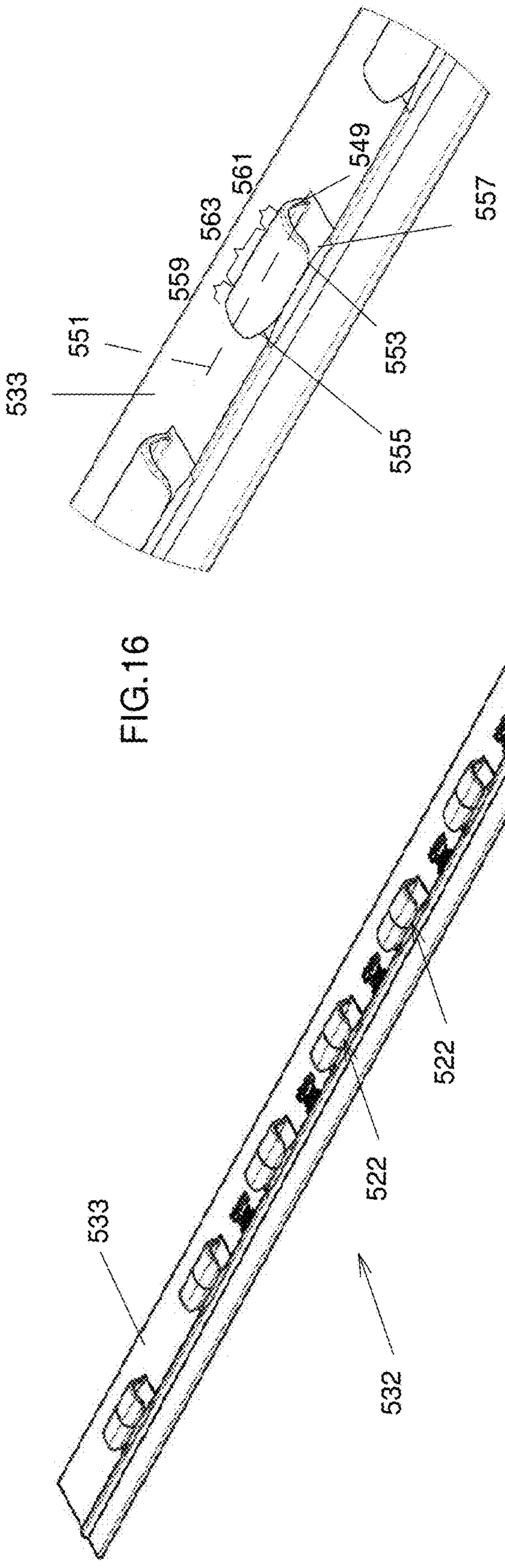


FIG. 12



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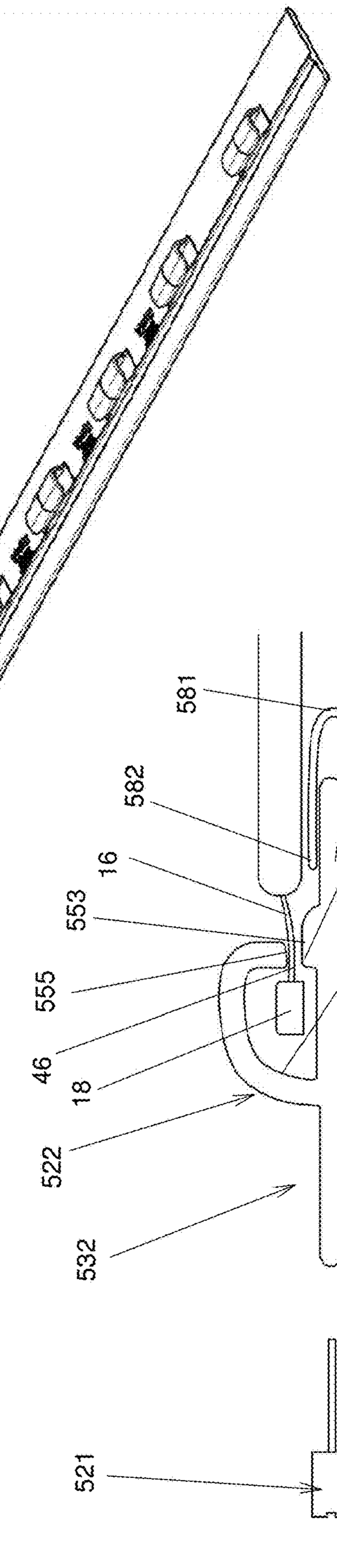
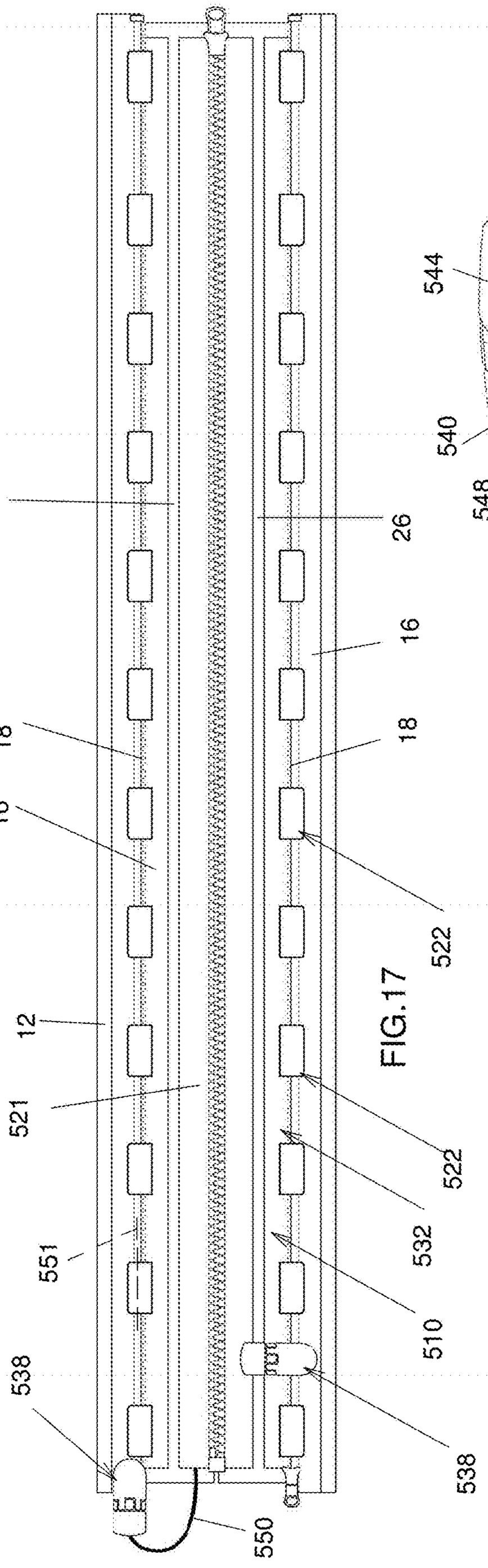


FIG.15

FIG.14



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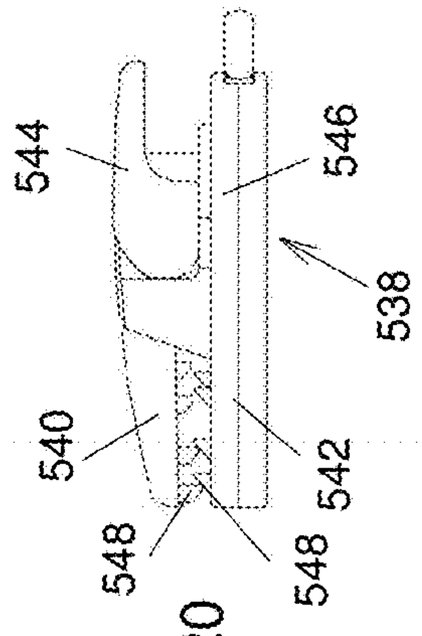


FIG. 20

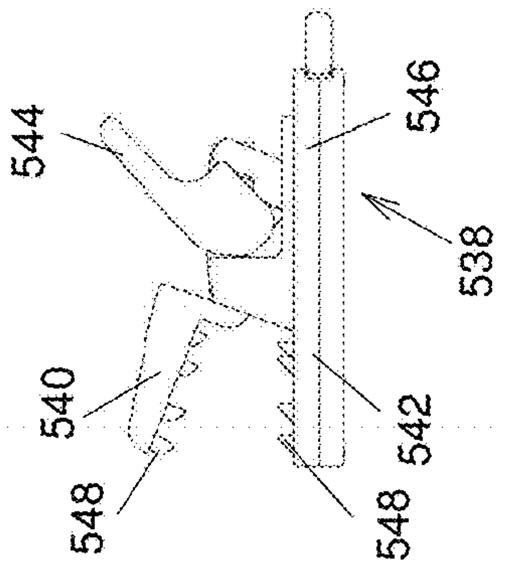
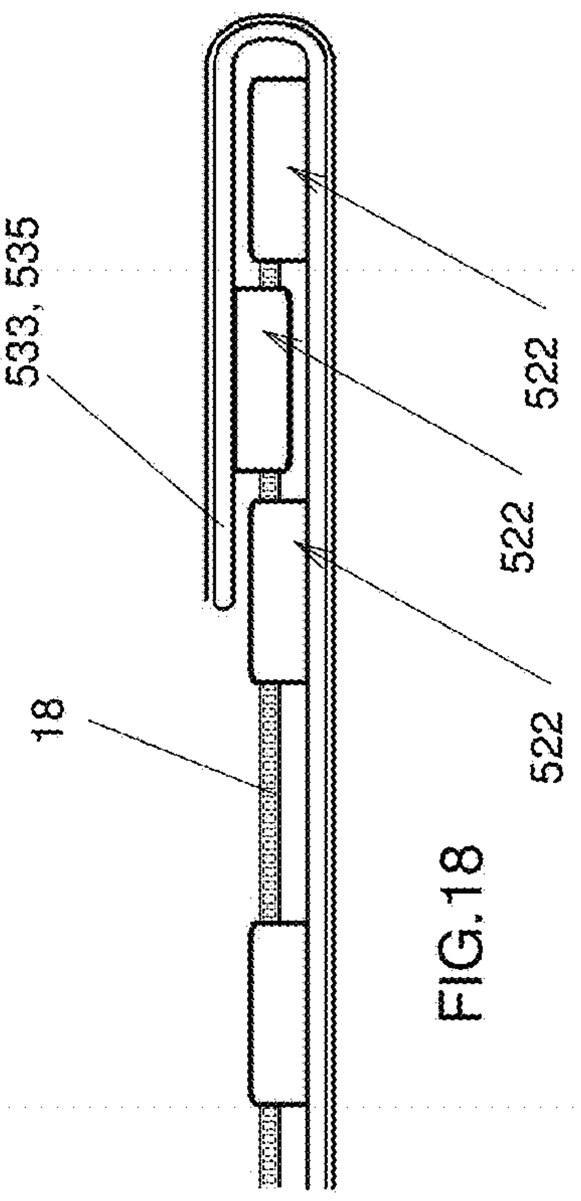


FIG.19



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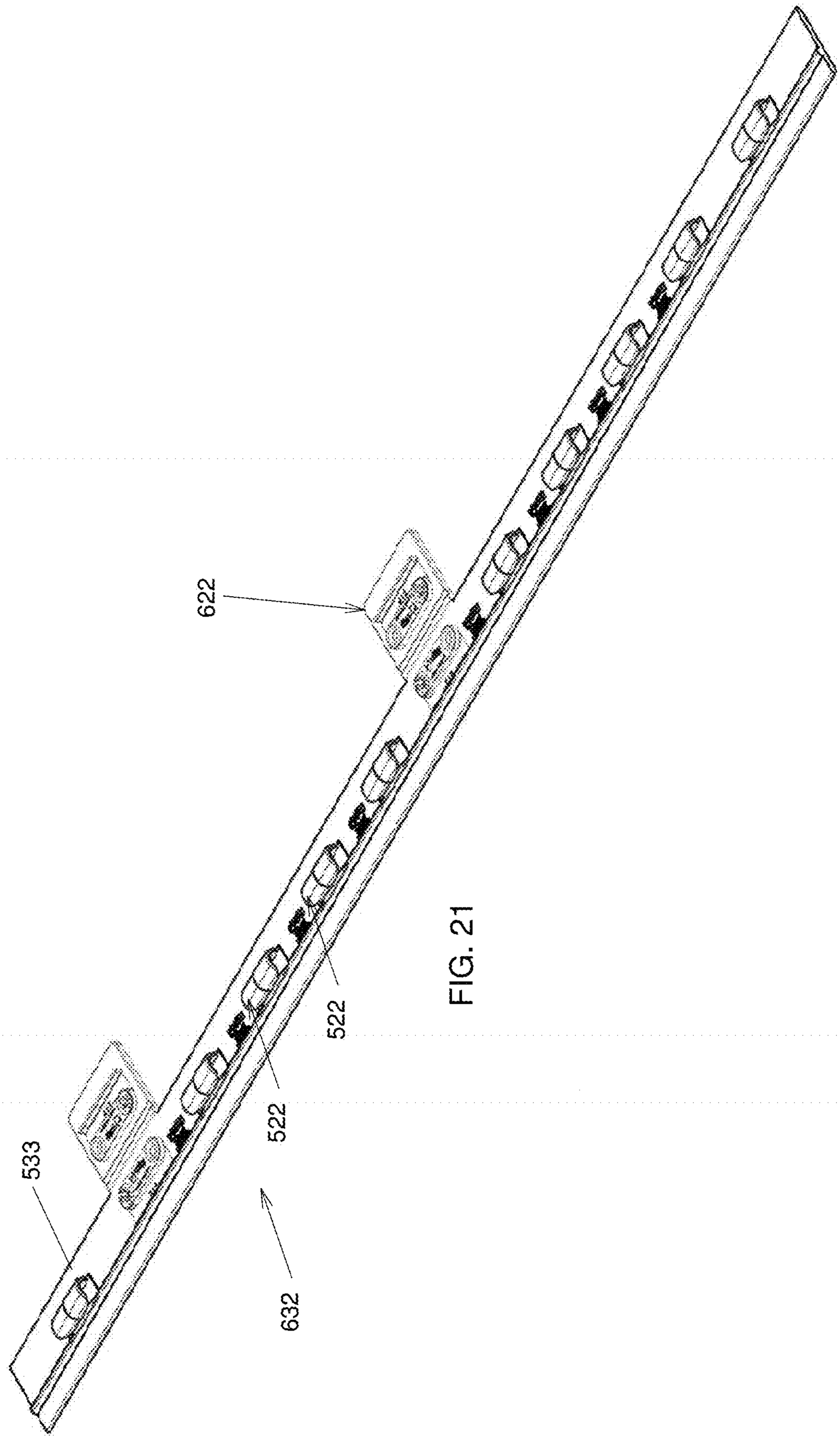
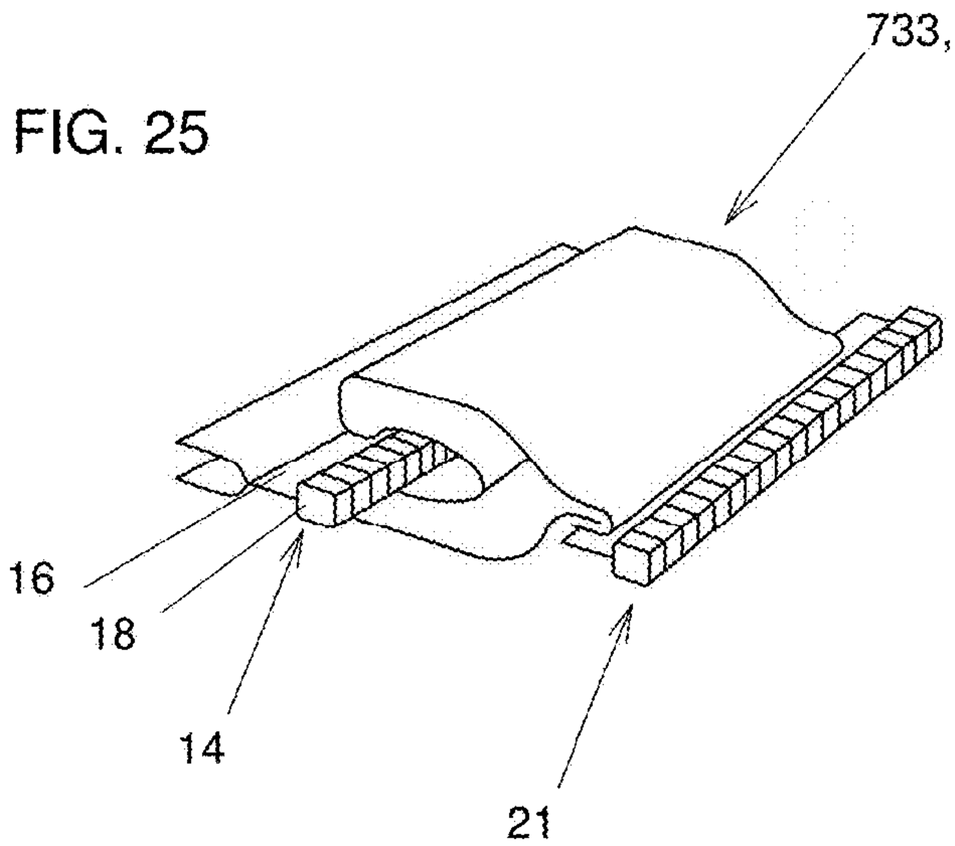


FIG. 21

FIG. 25



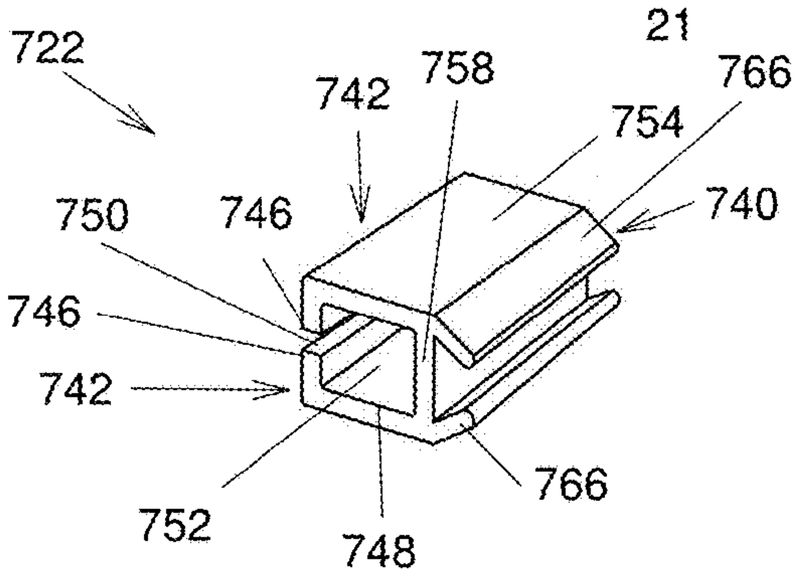


FIG. 23

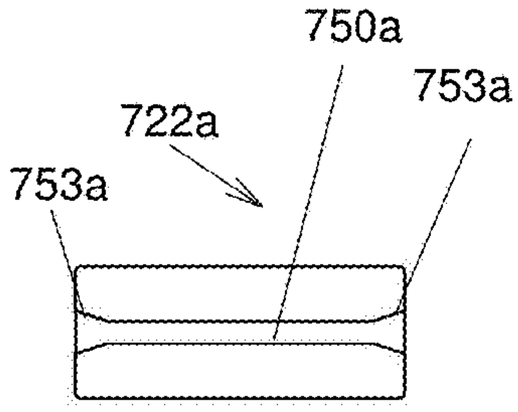


FIG. 26

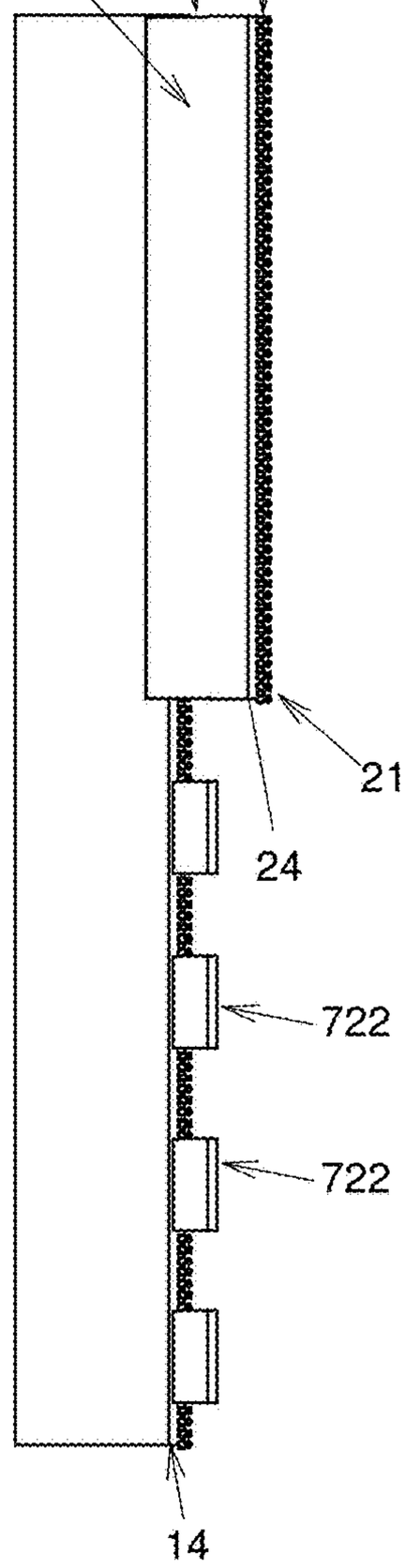


FIG. 22

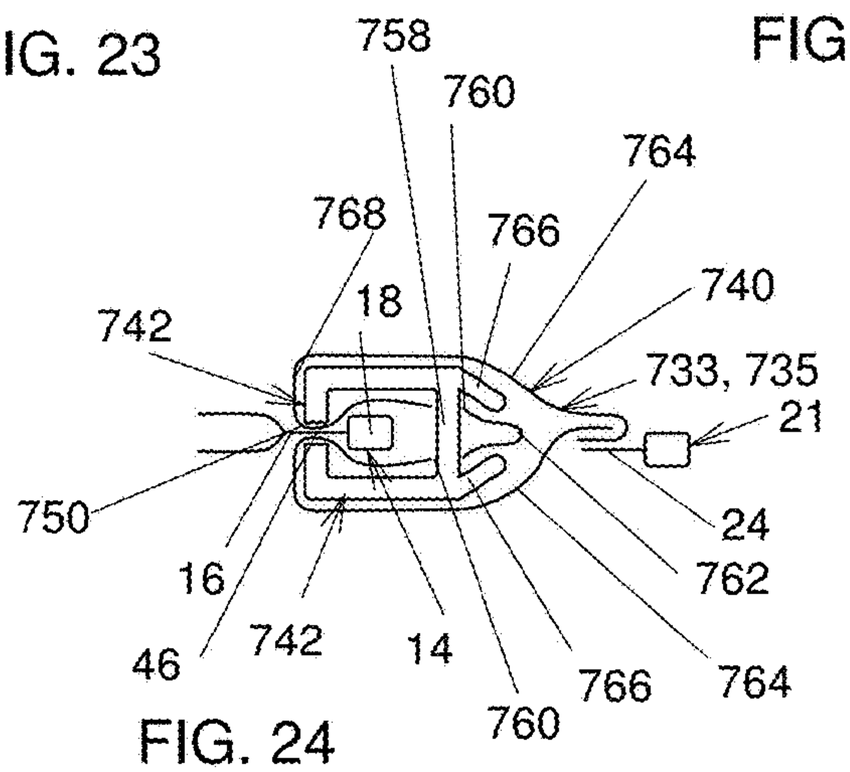


FIG. 24

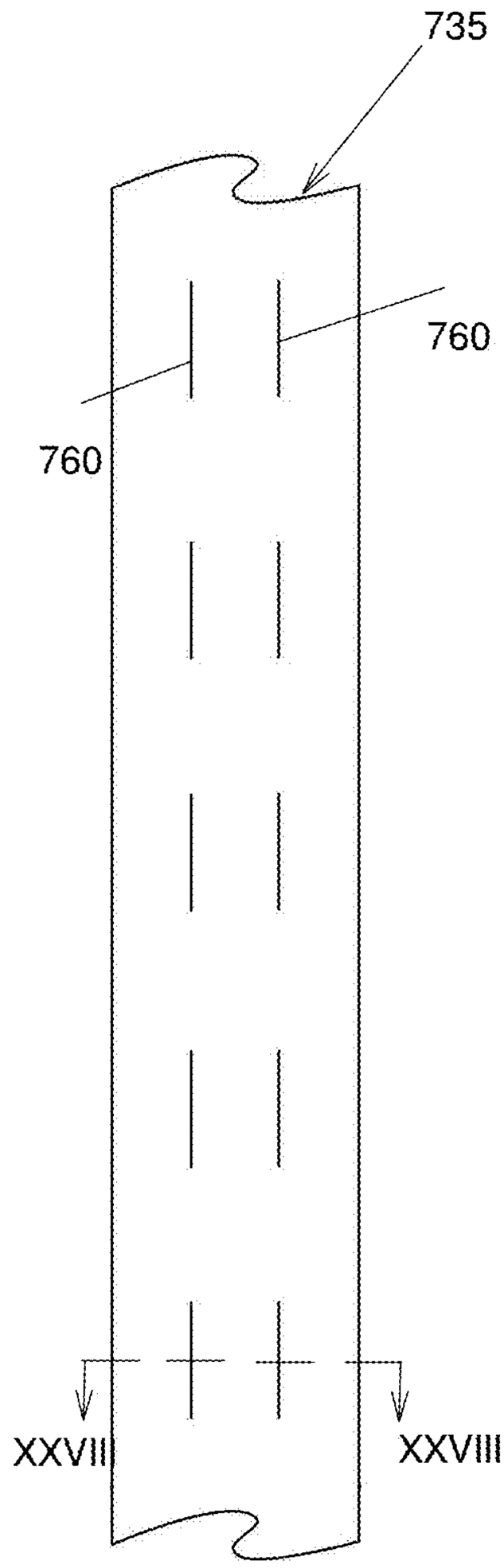


FIG. 27

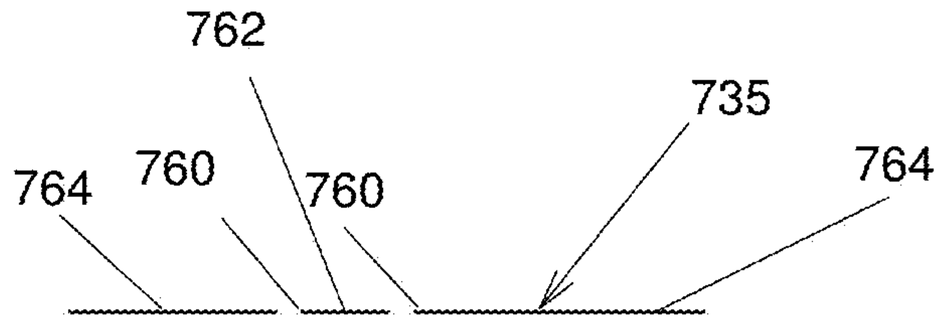


FIG. 28A

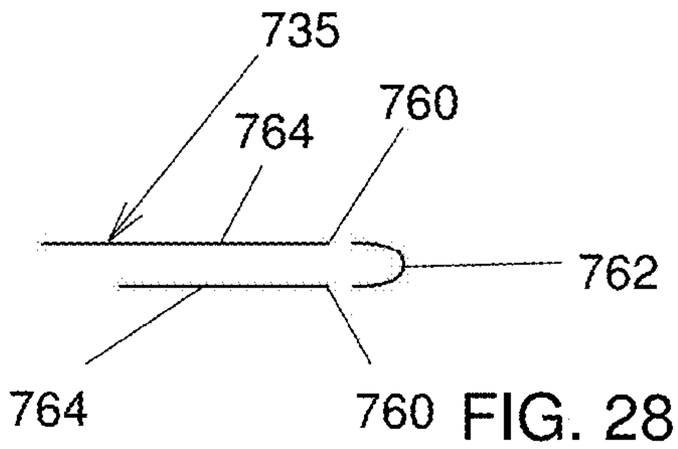


FIG. 28B

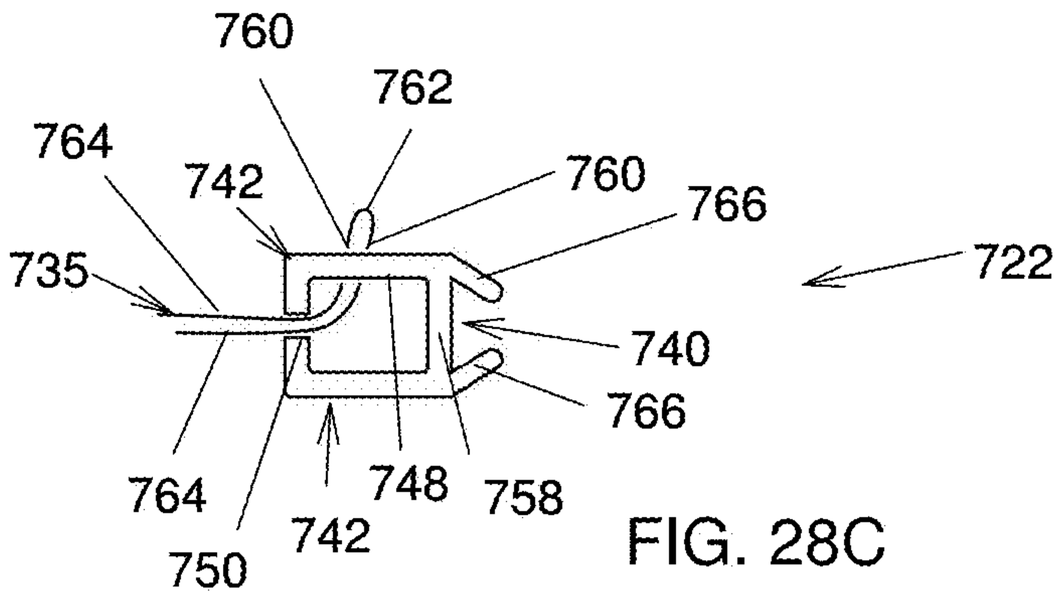


FIG. 28C

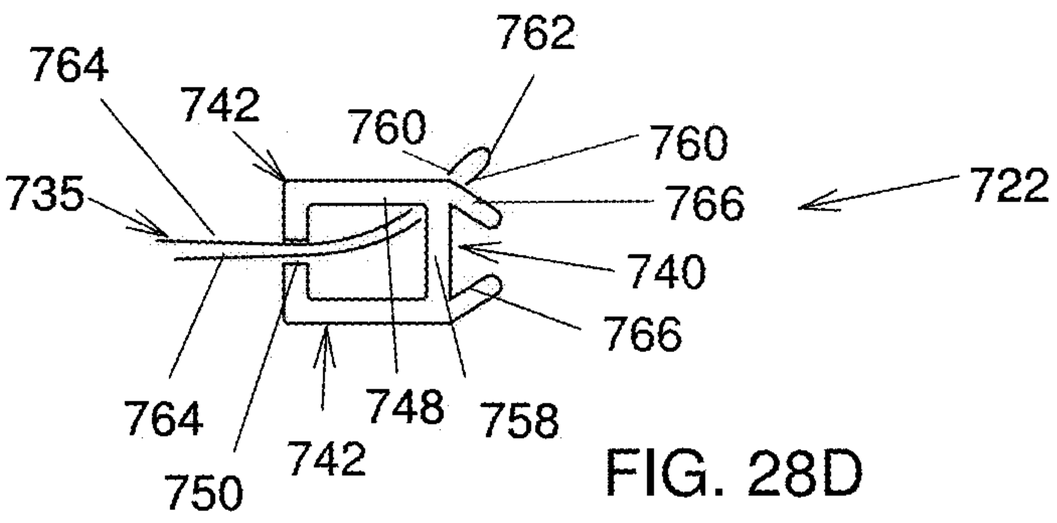


FIG. 28D

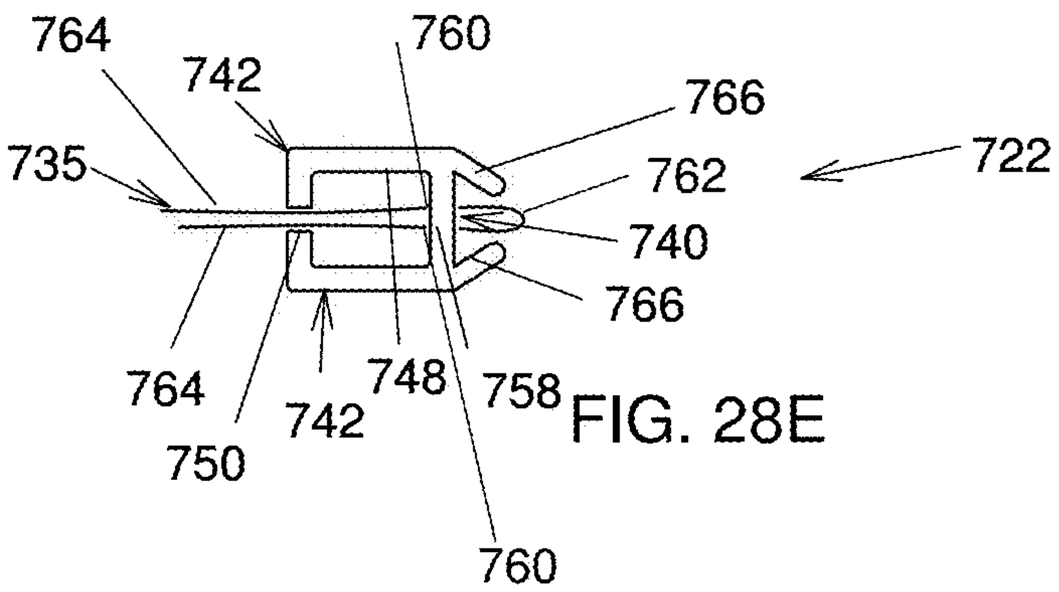
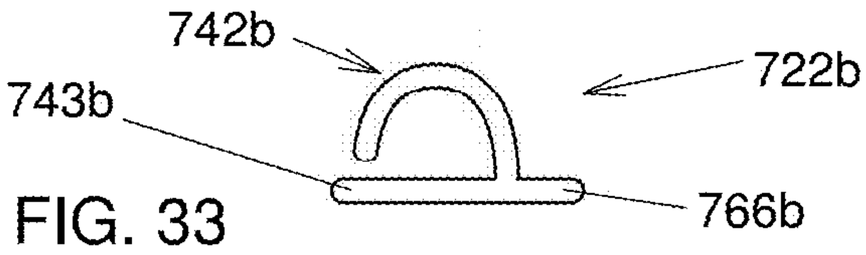


FIG. 28E



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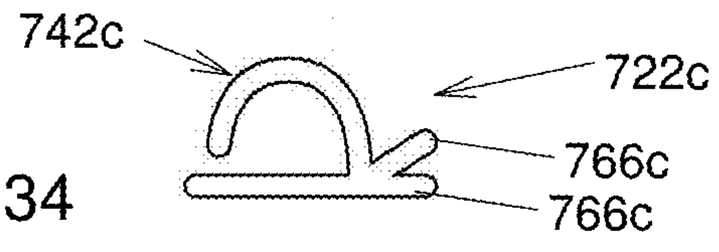
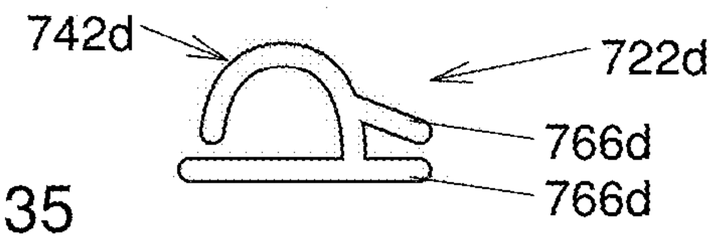


FIG. 34



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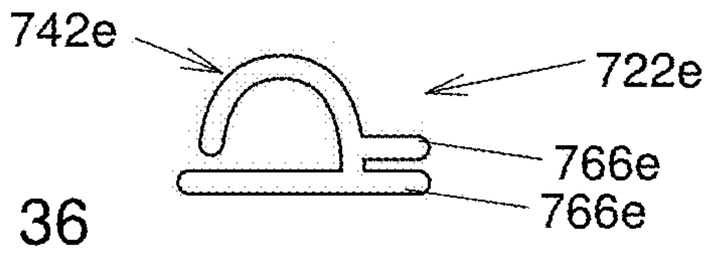
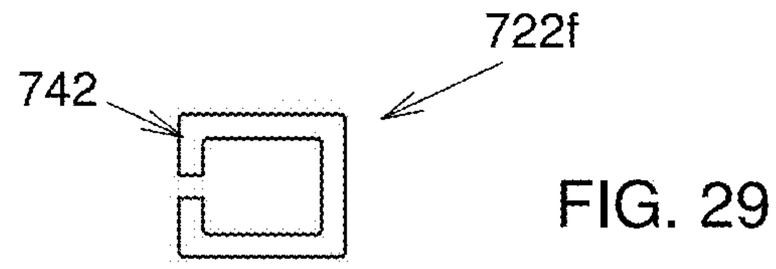


FIG. 36



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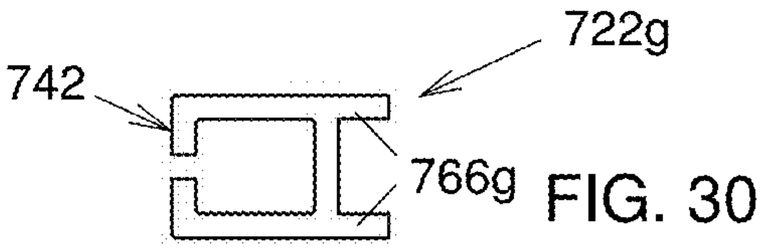


FIG. 30

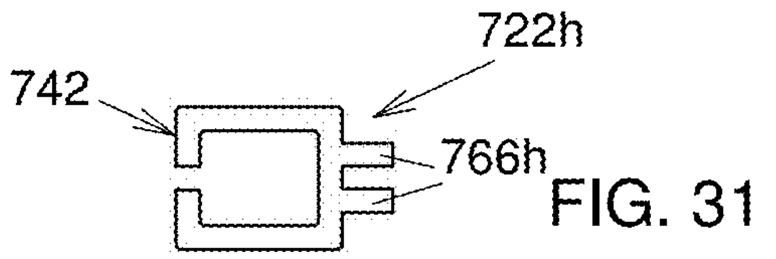


FIG. 31

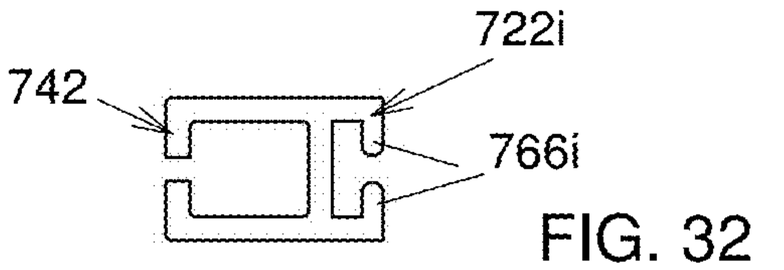


FIG. 32

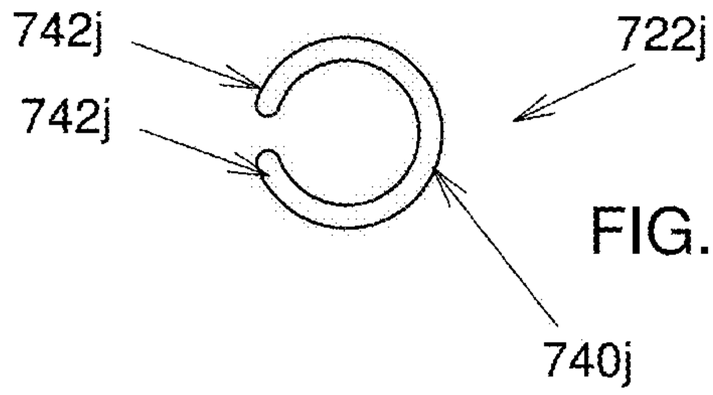


FIG. 37

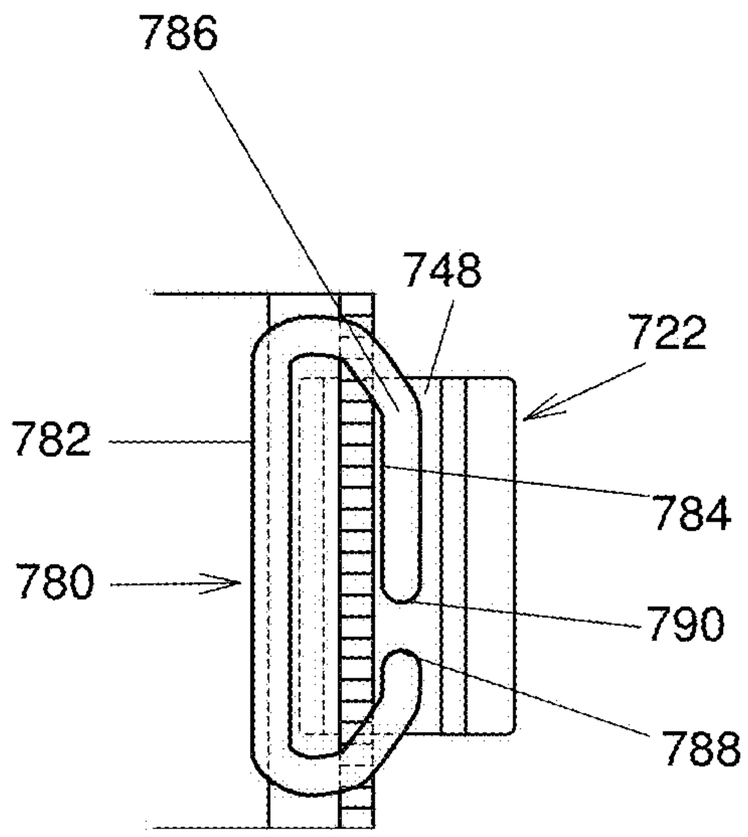


FIG. 38

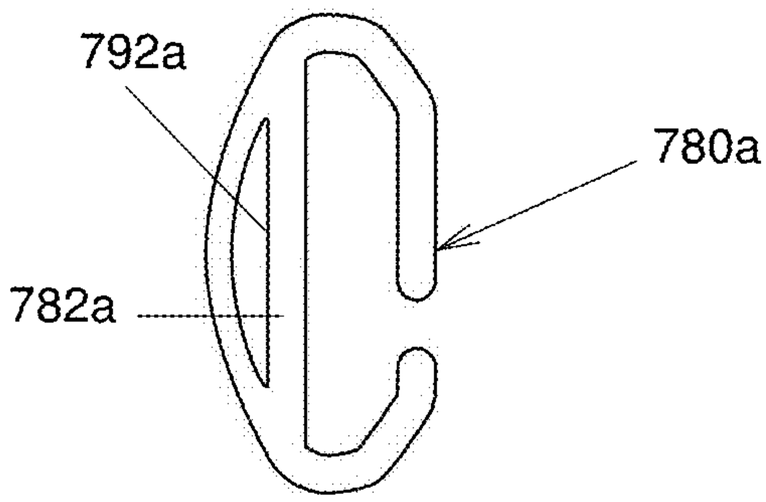


FIG. 39

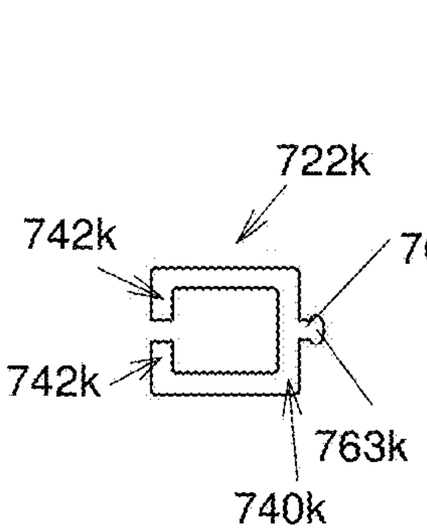


FIG. 41

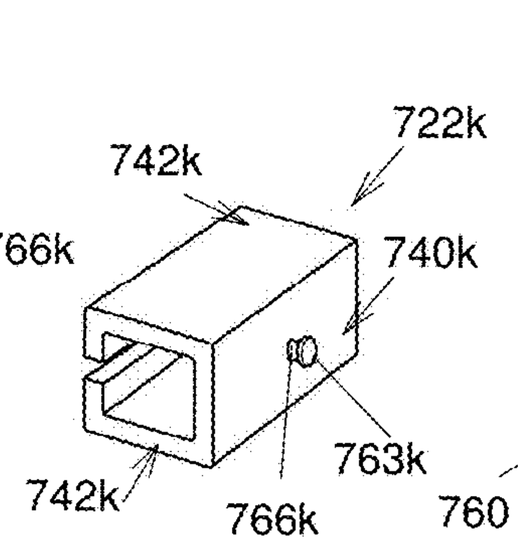


FIG. 40

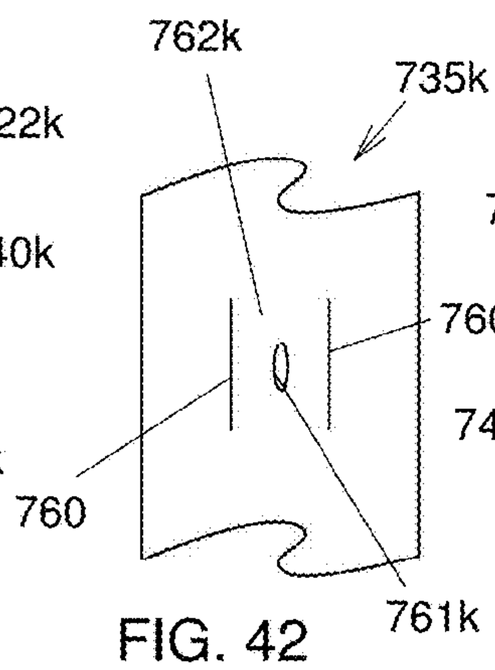


FIG. 42

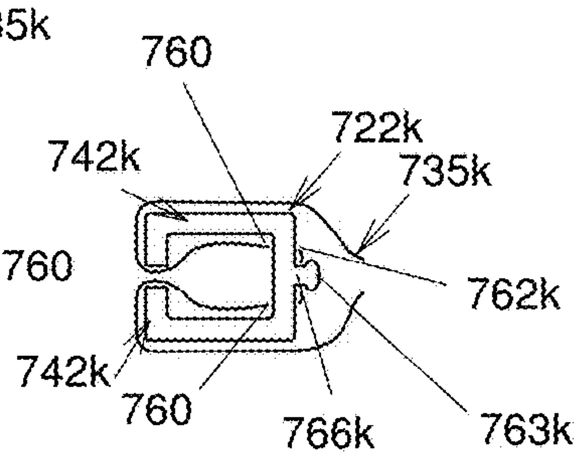
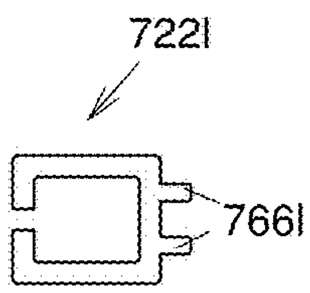


FIG. 43



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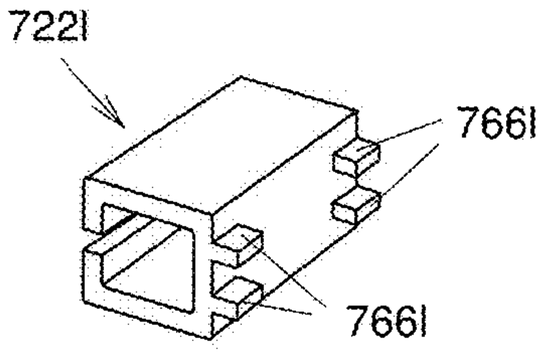

FIG. 44

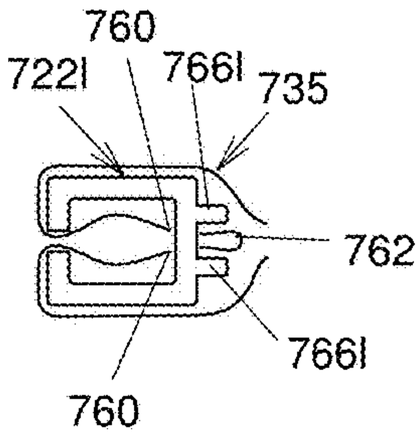

FIG. 46

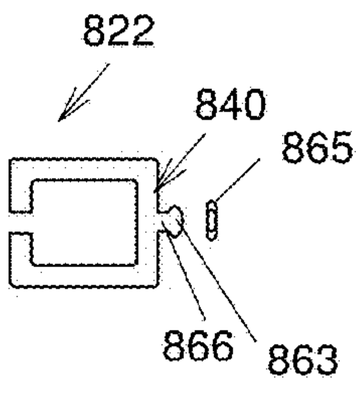

FIG. 48

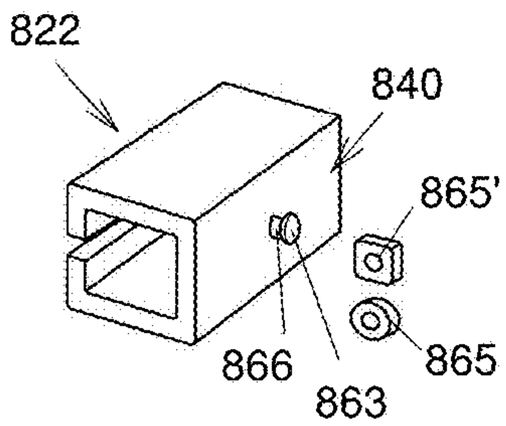

FIG. 47

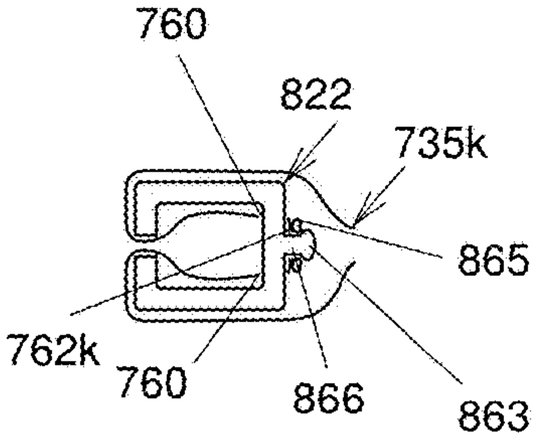

FIG. 49

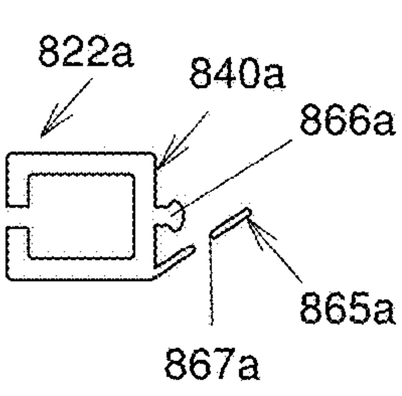

FIG. 51

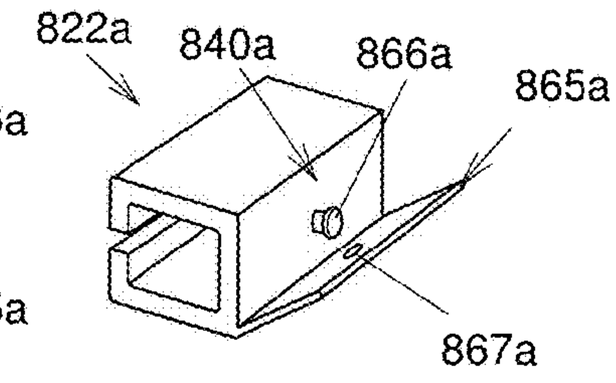

FIG. 50

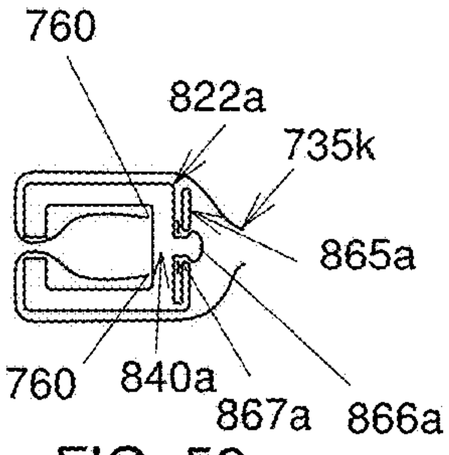

FIG. 52

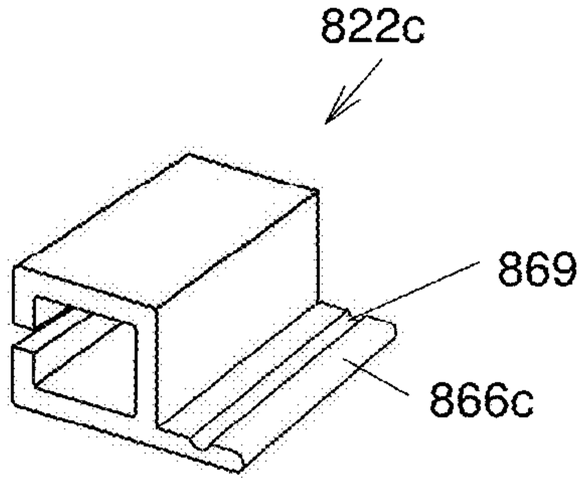

FIG. 55

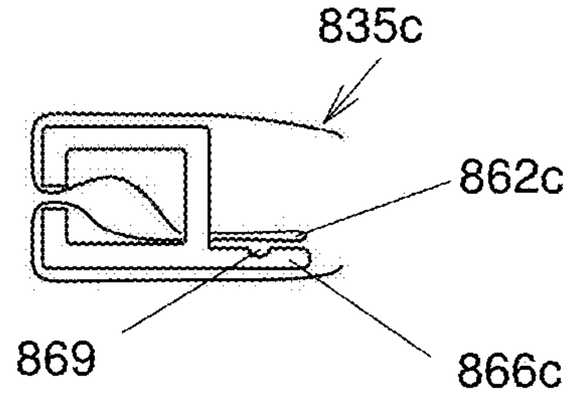

FIG. 56

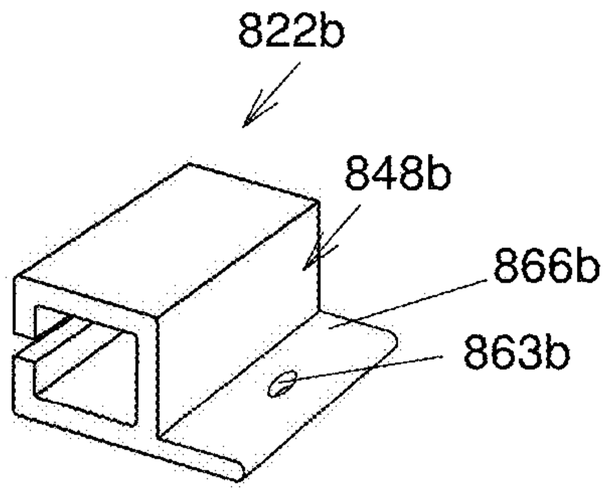

FIG. 53

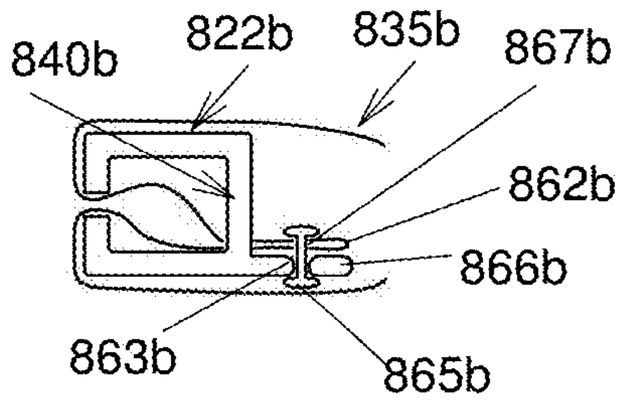

FIG. 54

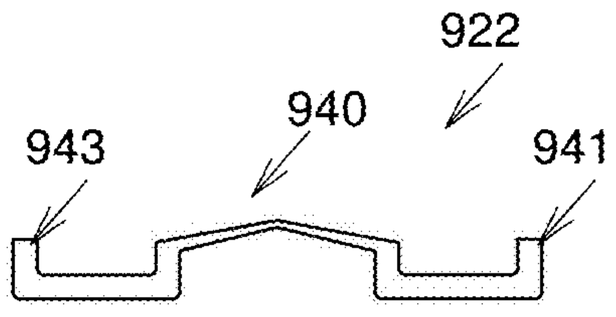

FIG. 77

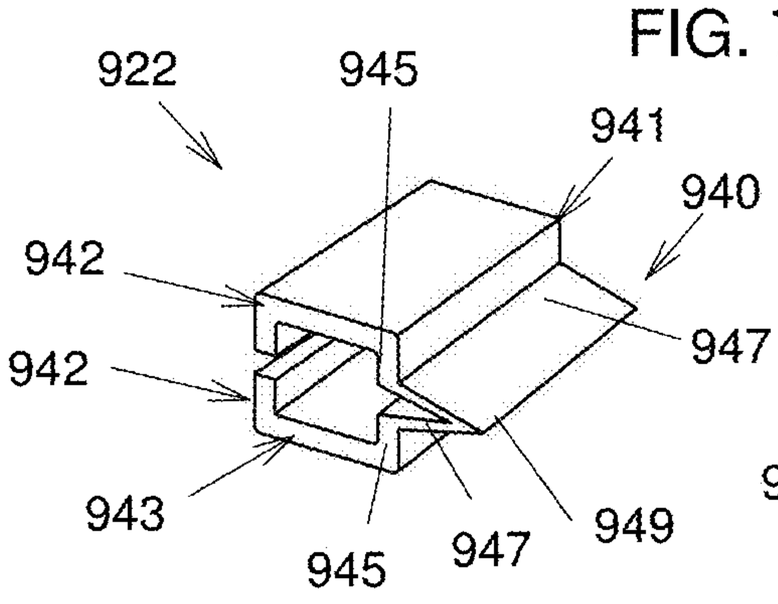

FIG. 76

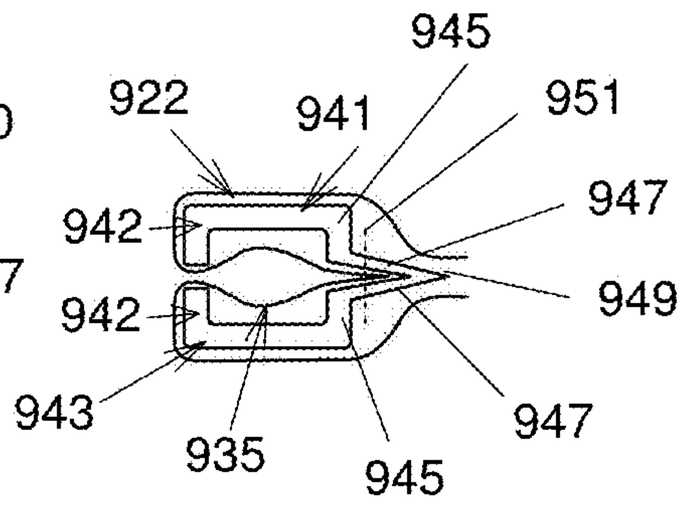

FIG. 78

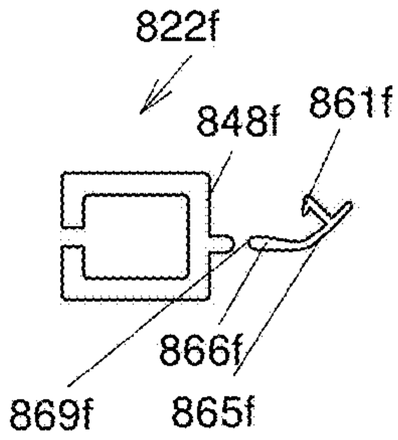

FIG. 66

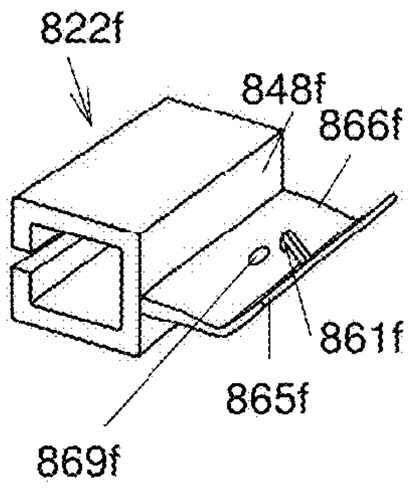

FIG. 65

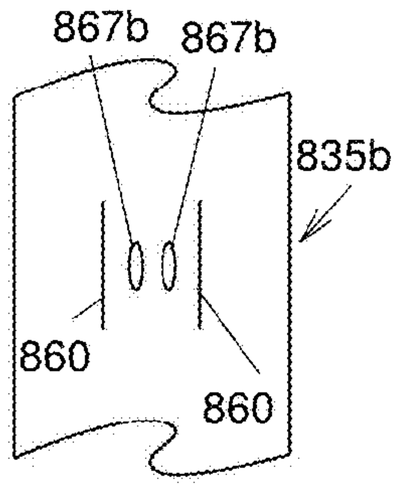

FIG. 67

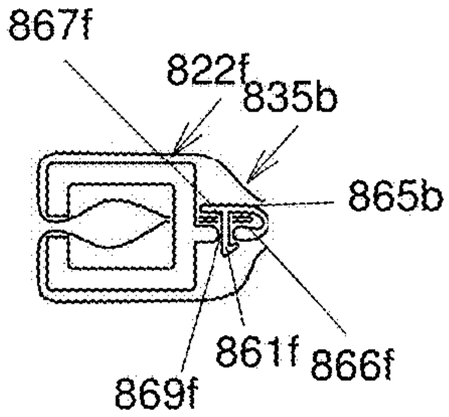

FIG. 68

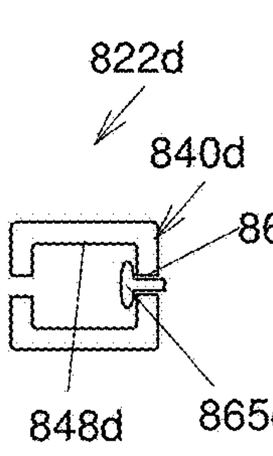

FIG. 58

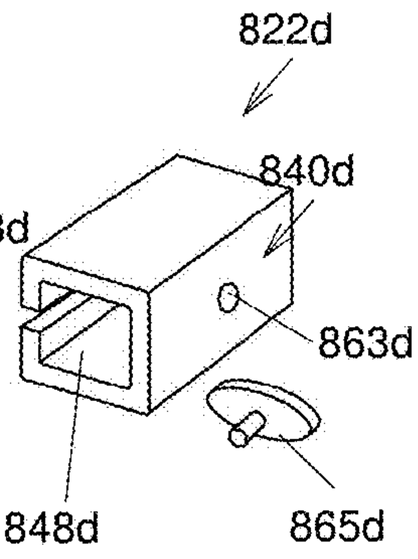

FIG. 57

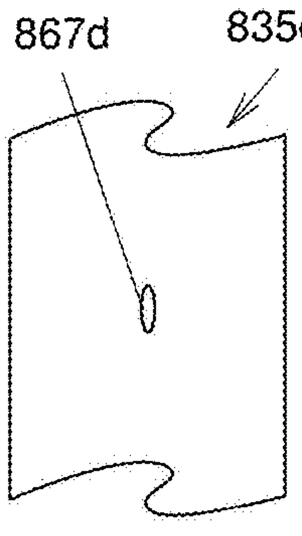

FIG. 59

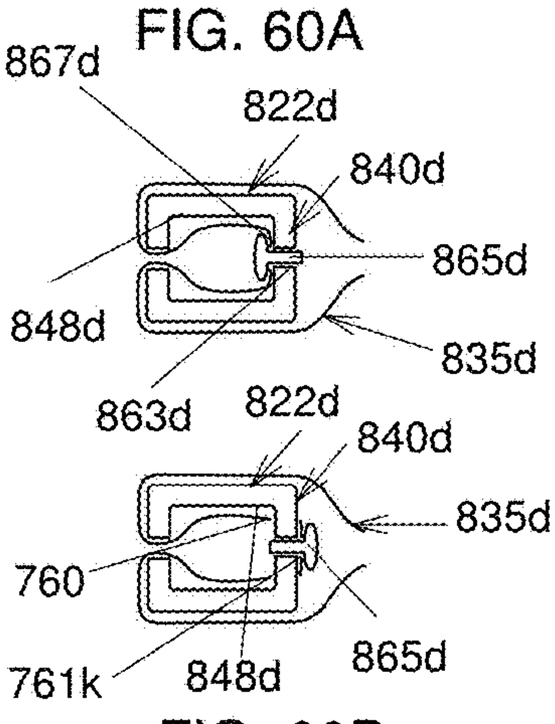

FIG. 60A

FIG. 60B

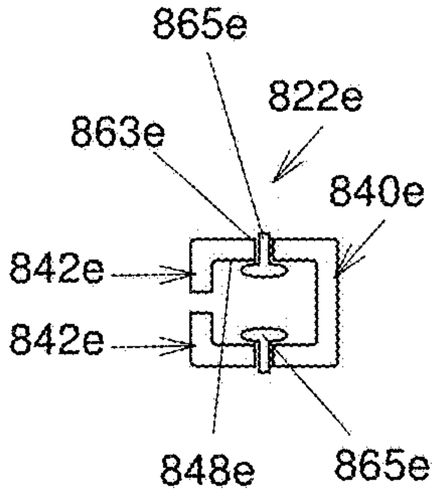

FIG. 62

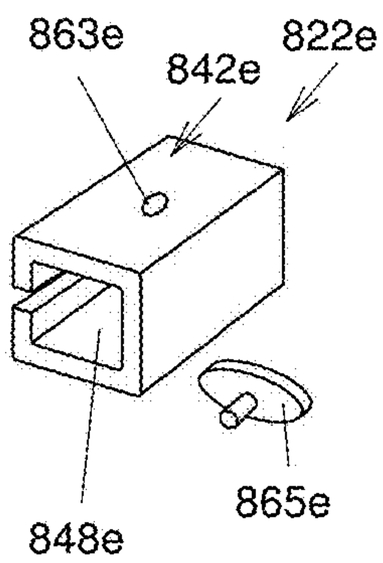

FIG.61

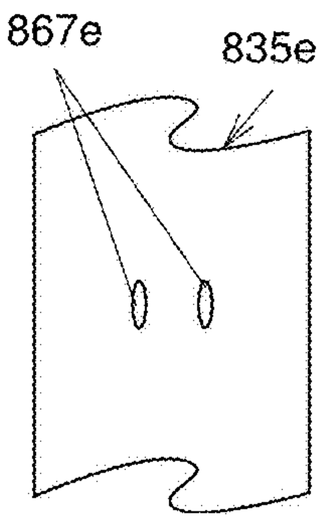

FIG. 63

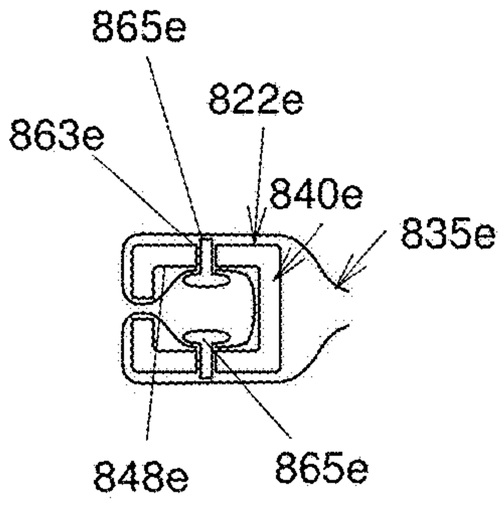

FIG. 64

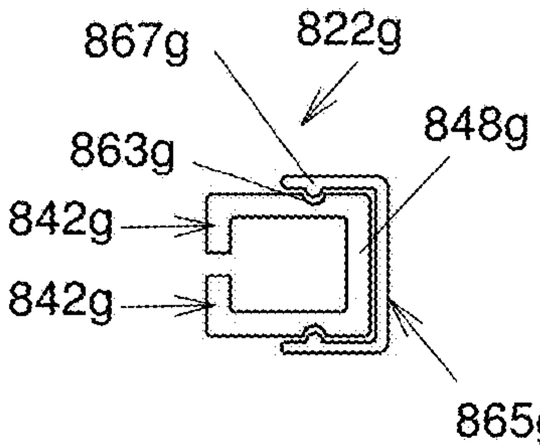

FIG. 70

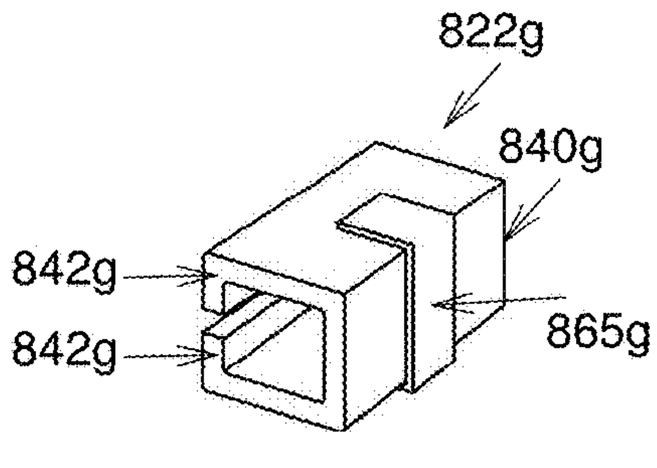

FIG. 69

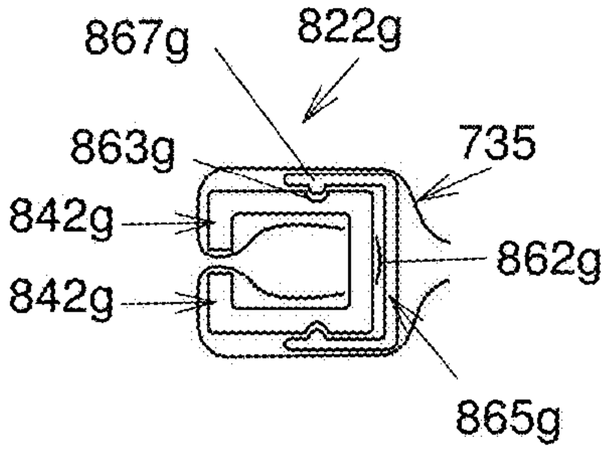

FIG. 71

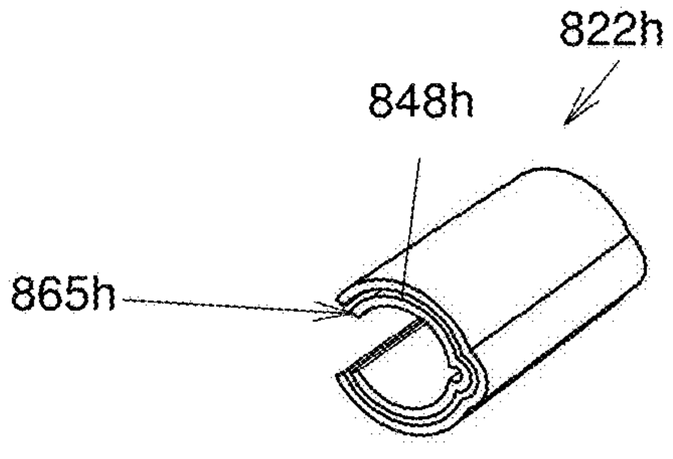

FIG. 72

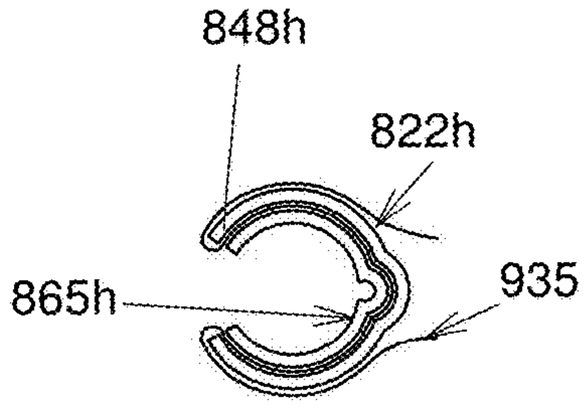

FIG. 73

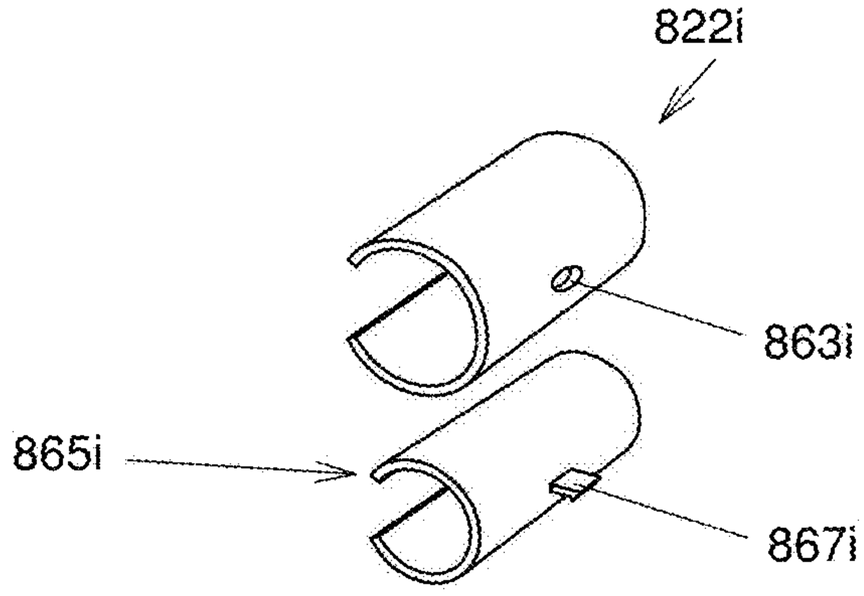

FIG. 74

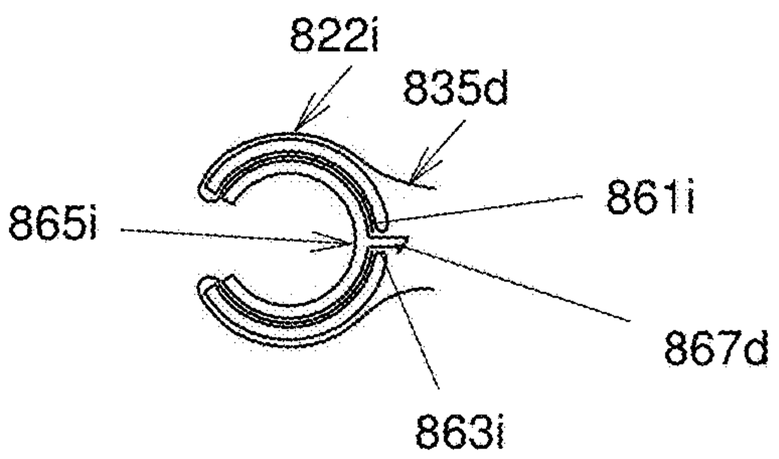

FIG. 75

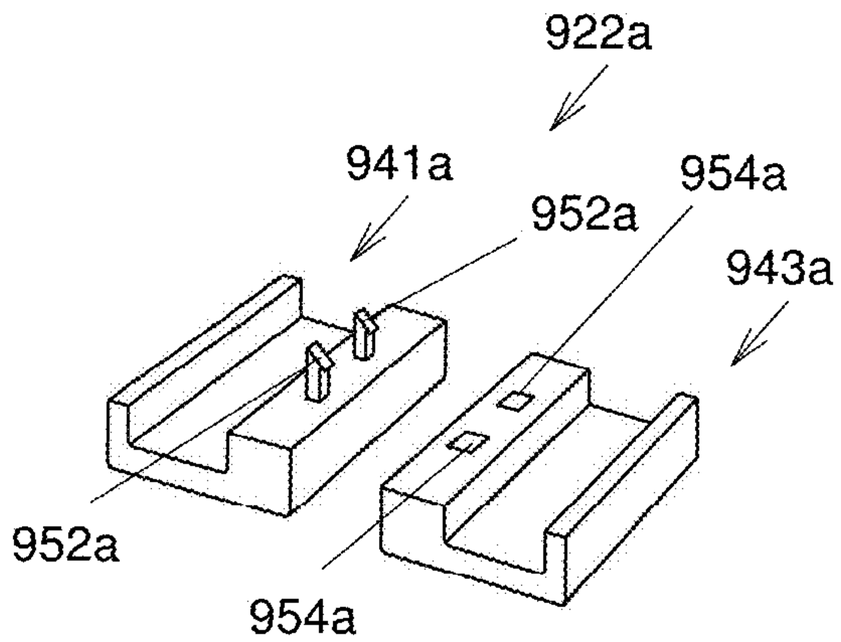

FIG. 79

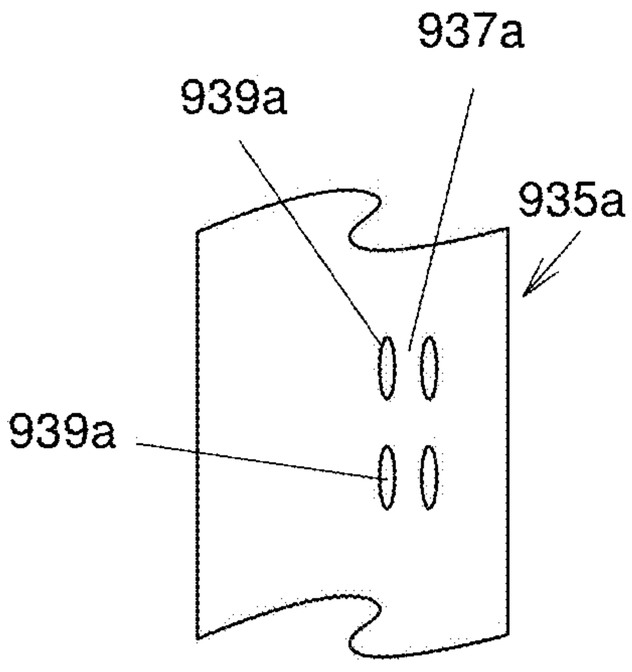

FIG. 80

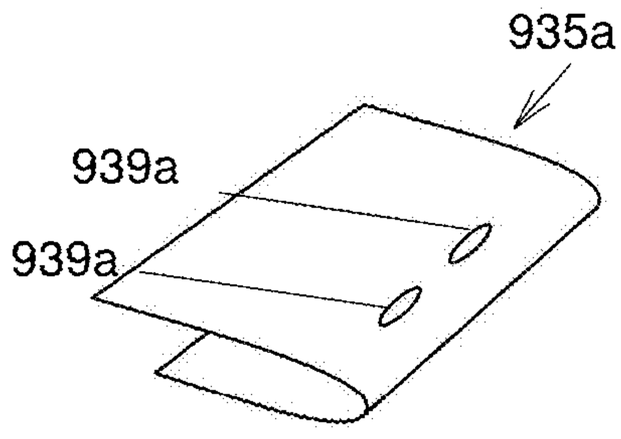

FIG. 81

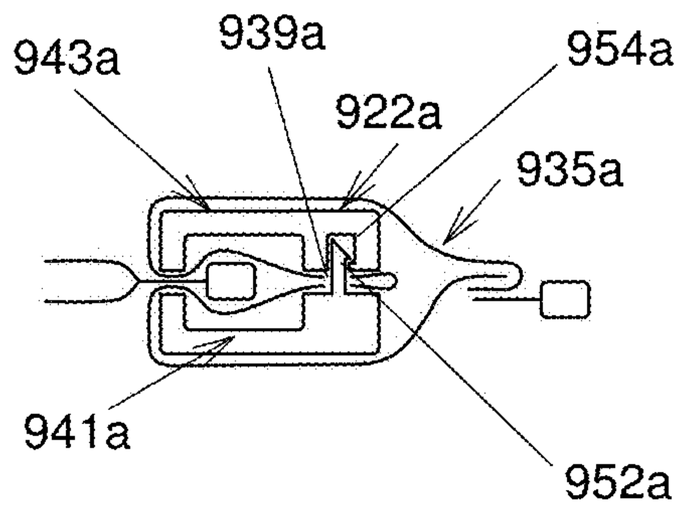

FIG. 82

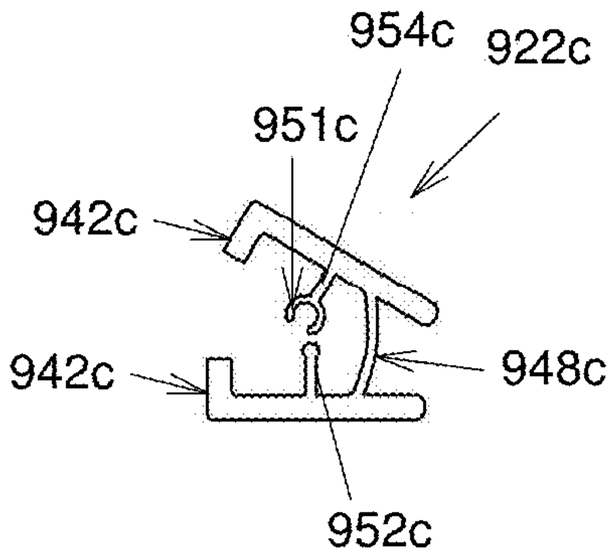

FIG. 84

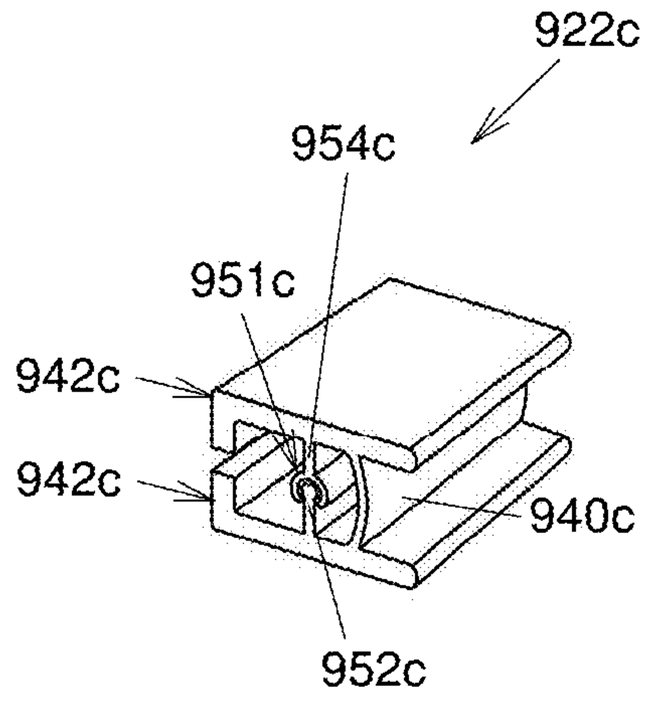

FIG. 83

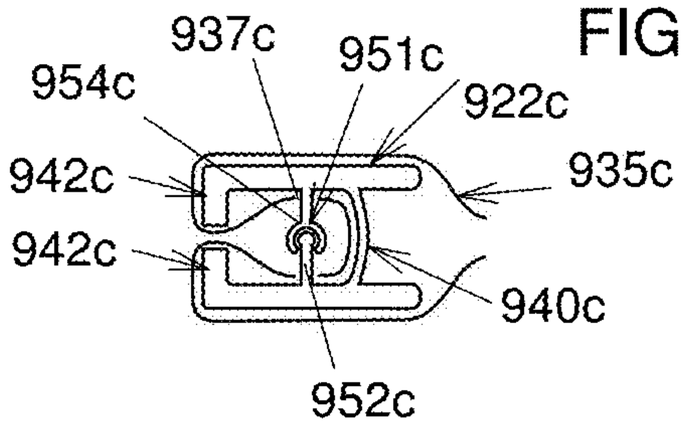

FIG. 85

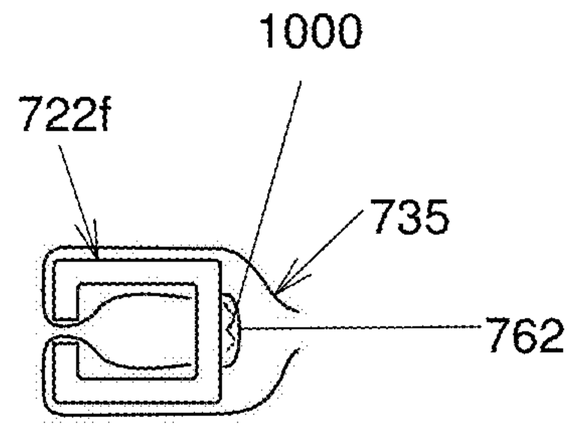

FIG. 86

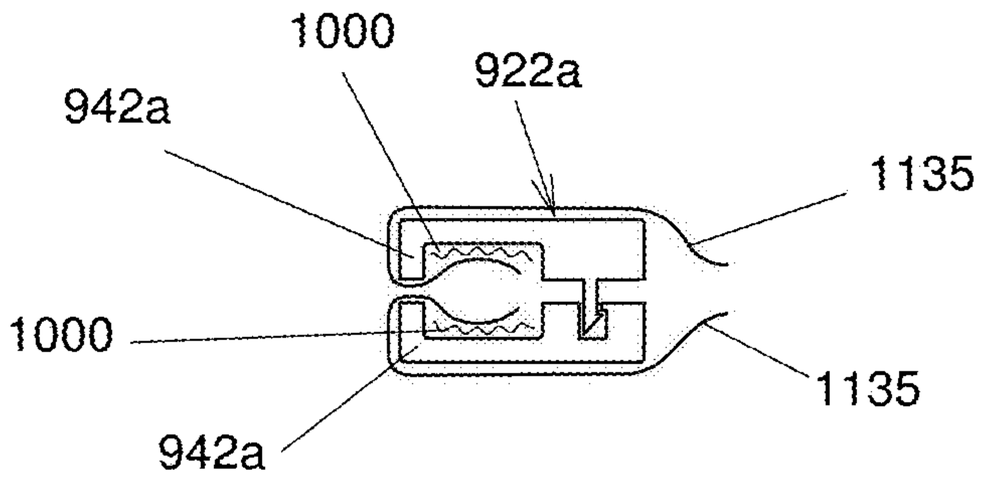

FIG. 87

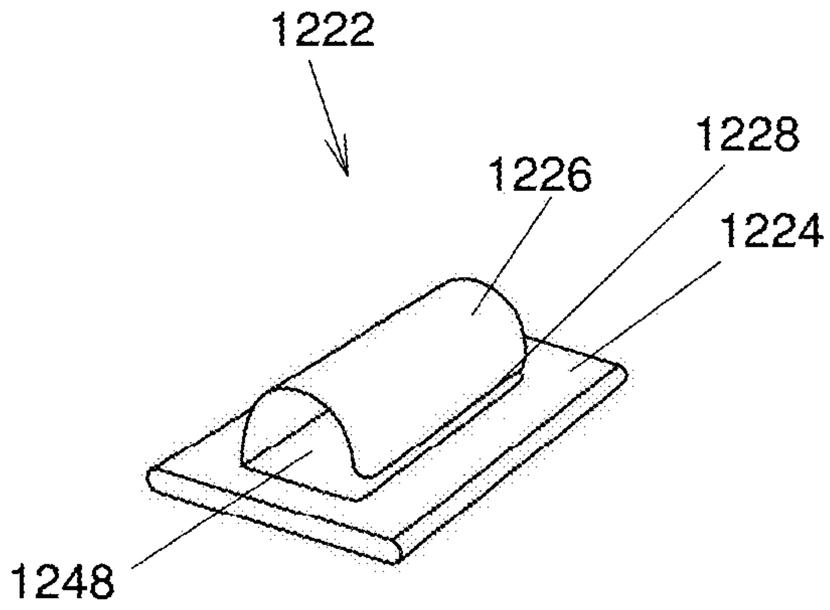

FIG. 88

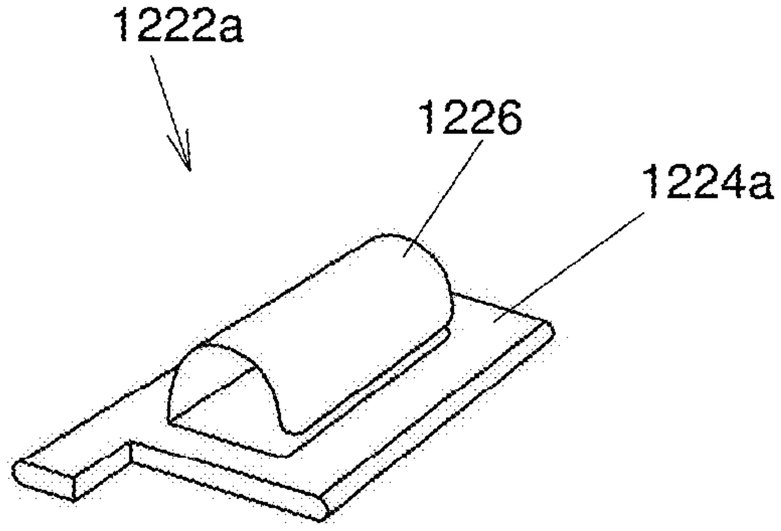

FIG. 90

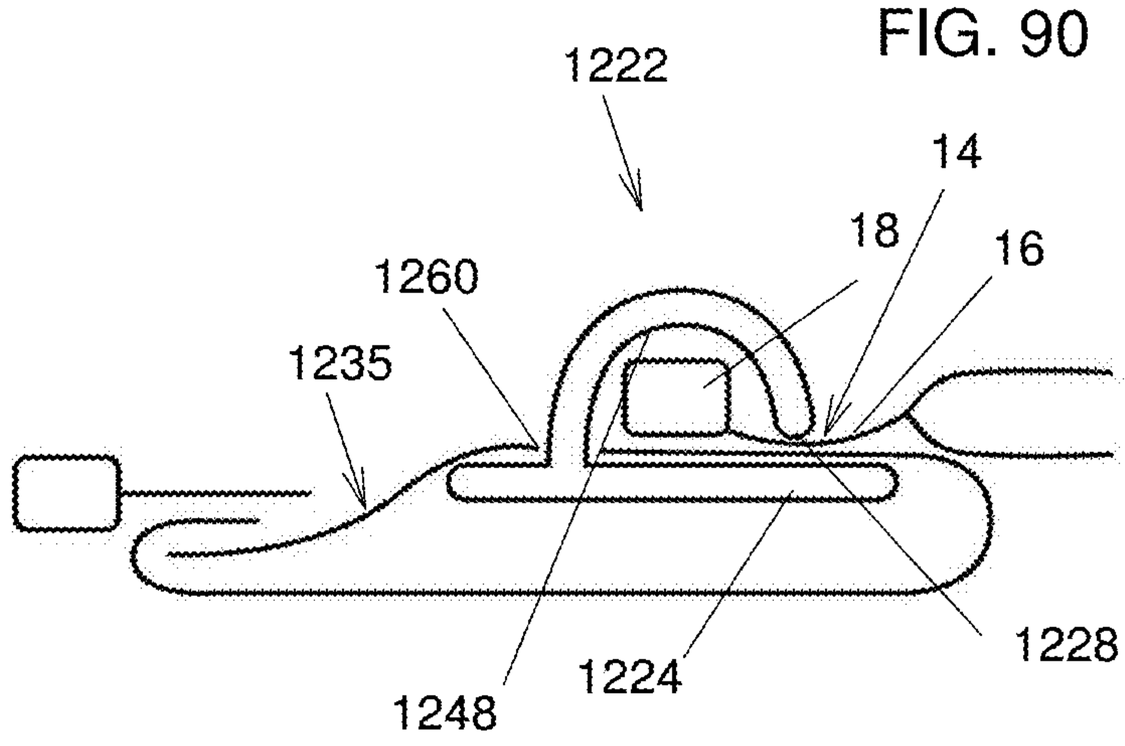

FIG. 89

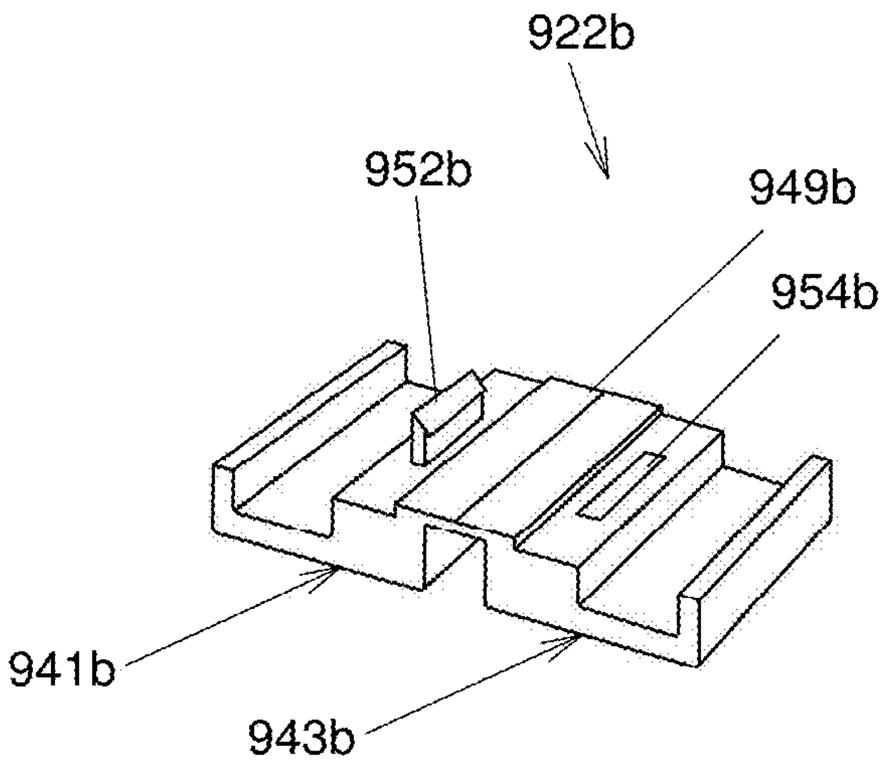

FIG. 91

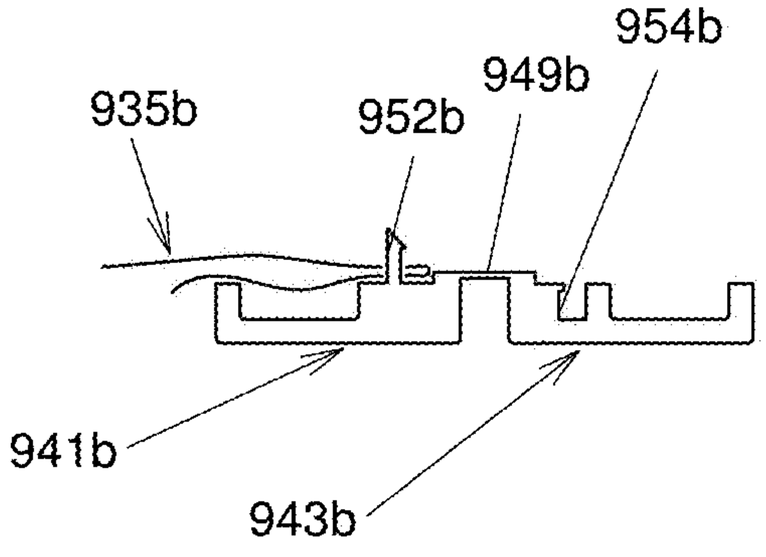

FIG. 92

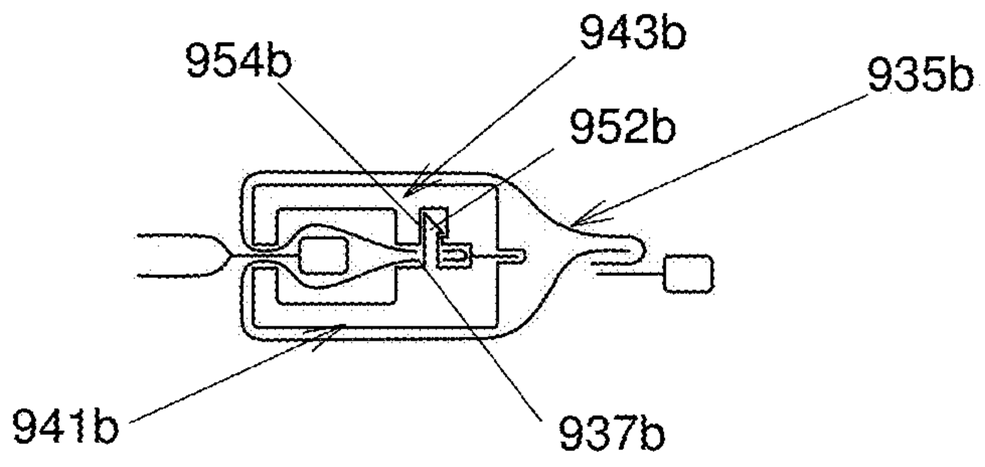

FIG. 93

GARMENT EXTENDER

FIELD OF THE INVENTION

The present invention relates to the general field of clothing, and is more specifically concerned with a garment extender.

BACKGROUND

Garment extenders, for example coat or jacket extenders, are useful for pregnant women, among others. Using such garment extenders, not only can the pregnant woman use the clothes she owns during pregnancy, but she can also use the extended garment to protect a baby carried in a baby carrier after giving birth. One problem with existing garment extenders is that they typically attach to an existing slide fastener, commonly referred to as a zipper, of the garment. Since there are many incompatible slide fasteners types on the market, this requires a large inventory of garment extenders to fit different brands and models of zip fasteners. Also, the buyer of the garment extender has to guess which type of slide fastener is used in the existing garment, or requires the help of a specialized salesperson to select the right type of garment extender that will zip to the existing slide fastener.

Accordingly, there exists a need for an improved garment extender. It is a general objective of the present invention to provide such an improved garment extender.

SUMMARY OF THE INVENTION

In a broad aspect, there is provided a garment extender usable with a garment having a garment slide fastener, the garment slide fastener having a pair of substantially elongated stringer tapes supporting each a row of teeth extending longitudinally therealong, the garment slide fastener also having a slider movable along the rows of teeth in a reciprocating movement for selectively attaching the teeth of both rows to each other when moved in a closing direction and selectively detaching the teeth of both rows from each other when moved in an opening direction opposed to the closing direction, the garment extender comprising an extender body defining substantially opposed extender body first and second side edges and opposed extender body top and bottom edges extending each between the extender body first and second side edges; at least two attachment mounts provided each at a respective one of the extender body first and second side edges; at least two attachments, each mounted to a respective one of the attachment mounts, each of the attachments including an attachment body and a pair of jaws extending from the attachment body, each jaw terminating at a respective jaw free end, the jaws delimiting a channel therebetween opened at both channel ends thereof and the jaw free ends defining a slit therebetween leading to the channel, each jaw defining opposed jaw inner and outer surfaces, the jaw inner surfaces facing each other with the channel therebetween; wherein each attachment mount includes a foldable material, the attachments being more rigid than the foldable material, the attachment being mounted to the attachment mount with the foldable material running along the jaws so that the jaw inner surfaces, outer surfaces and free ends are covered by the foldable material; wherein, with the attachments operatively secured to the garment slide fastener, the slit of each attachment receives thereinto a gripped portion of one of the stringer tapes and the channel of each attachment receives thereinto the teeth

that are supported by the stringer tape adjacent the gripped portion, the foldable material being between the jaws inner surfaces and the teeth and between the stringer tapes and the jaw free ends.

There may also be provided a garment extender wherein the attachment body defines a body central portion from which the jaws extend, the foldable material defining a pair of apertures, an inter-aperture portion therebetween and a pair of extra-aperture portions extending away from each other from a respective one of the apertures opposed to the inter-aperture portion, the attachment being mounted to the foldable material with the body central portion inserted through both apertures, the extra-aperture portions each extending from a respective one of the apertures and covering a respective one of the jaws.

There may also be provided a garment extender wherein the extra-aperture portions each extend along a respective one of the jaw inner surfaces, jaw free ends and jaw outer surfaces.

There may also be provided a garment extender wherein a pair of arms extends from the body central portion away from the jaws, at least part of the inter-aperture portion being received between the arms.

There may also be provided a garment extender wherein the extra-aperture portions further extend over the attachment body and are joined to each other so that the attachments are contained in a cavity defined by the foldable material with only the body central portion protruding out of the cavity.

There may also be provided a garment extender wherein the arms are angled so as to converge towards each other in a direction leading away from the body central portion.

There may also be provided a garment extender wherein a prong extends from the body central portion opposed to the jaws, the foldable material defining a prong receiving aperture in the inter-aperture portion, the prong protruding through the prong receiving aperture.

There may also be provided a garment extender further comprising a fastener secured to the prong, the foldable material being secured to the prong between the body central portion and the fastener.

There may also be provided a garment extender further comprising a fastener, the fastener being configured and sized to engage both the attachment and the foldable material so that the foldable material is secured to the attachment.

There may also be provided a garment extender wherein the jaws have bevelled jaw free end portions so that the slit defines flared slit ends.

There may also be provided a garment extender wherein at least one of the jaws has a substantially L-shaped transversal cross-sectional configuration.

There may also be provided a garment extender wherein at least one of the jaws has a substantially arcuate transversal cross-sectional configuration.

There may also be provided a garment extender wherein at least one of the jaws has a substantially rectilinear transversal cross-sectional configuration.

There may also be provided a garment extender wherein the foldable material includes cloth.

There may also be provided a garment extender further comprising a locking clip, the locking clip defining a clip body and a locking portion extending from the clip body, the locking portion being removably insertable in the channel when the attachment is operatively attached to the garment slide fastener, whereby the locking portion increases frictional forces between the attachment mount and the garment

slide fastener relative to a configuration in which the locking portion is outside of the channel.

There may also be provided a garment extender wherein the attachment body includes attachment body first and second portions from which a respective one of the jaws extends, the body first and second portions being secured to each other with at least part of the foldable material contained between the body first and second portions.

There may also be provided a garment extender wherein the body first and second portions are secured to each other with at least part of the foldable material pinched between the body first and second portions.

There may also be provided a garment extender wherein the foldable material defines a pinched portion pinched between the body first and second portions and a pair of covering portion extending from the pinched portion, each of the covering portion covering a respective one of the jaws.

There may also be provided a garment extender wherein the body first and second portions and the pinched portion are stitched to each other.

There may also be provided a garment extender wherein the body first portion defines a prong and the body second portion define a prong receiving recess, the prong engaging the prong receiving recess so that the prong is locked in the prong receiving recess to lock the body first and second portions to each other; the prong extends through the pinched portion.

There may also be provided a garment extender wherein an arm extends from the body central portion away from the jaws, at least part of the inter-aperture portion being secured to the arm.

There may also be provided a garment extender wherein the attachment has a substantially C-shaped cross-sectional configuration in a plane substantially perpendicular to the channel.

In another broad aspect, there is provided a garment extender usable with a garment having a garment slide fastener, the garment slide fastener having a pair of substantially elongated stringer tapes supporting each a row of teeth extending longitudinally therealong, the garment slide fastener also having a slider movable along the rows of teeth in a reciprocating movement for selectively attaching the teeth of both rows to each other when moved in a closing direction and selectively detaching the teeth of both rows from each other when moved in an opening direction opposed to the closing direction, the garment extender comprising: an extender body defining substantially opposed extender body first and second side edges and opposed extender body top and bottom edges extending each between the extender body first and second side edges; at least two elongated attachment mounts provided along a respective one of the extender body first and second side edges; a plurality of attachments each mounted to one of the attachment mounts at longitudinally spaced apart locations, each of the attachments including an attachment body and a pair of jaws extending from the attachment body, each jaw terminating at a respective jaw free end, the jaws delimiting a channel therebetween opened at both channel ends thereof and the jaw free ends defining a slit therebetween leading to the channel, each jaw defining opposed jaw inner and outer surfaces, the jaw inner surfaces facing each other and delimiting the channel. With the attachments operatively secured to the garment slide fastener, the slit of each attachment receives thereinto a gripped portion of one of the stringer tapes and the channel of each attachment receives thereinto the teeth that are supported by the stringer tape adjacent the gripped portion.

There may also be provided a garment extender wherein each attachment mount includes a foldable material, the attachments being more rigid than the foldable material, the attachment being embedded at least partially in the foldable material.

Advantageously, in some embodiments, the proposed garment extender may be used with garments having a wide variety of slide fastener dimensions. Also, in some embodiments, the foldable material may provide good friction characteristics so that the garment extender is relatively securely mounted to the slide fastener. The presence of the foldable material may also, in some embodiments, seal the junction between the slide fastener and the garment extender, thereby minimizing or eliminating cold air and moisture infiltration through this junction.

Other objects, advantages and features of the present invention will become more apparent upon reading of the following non-restrictive description of preferred embodiments thereof, given by way of example only with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. **1**, in a front elevation view, illustrates a garment in the form of a jacket;

FIG. **2**, in a front elevation view, illustrates the garment of FIG. **1** to which is attached a garment extender in accordance with an embodiment of the present invention;

FIG. **3**, in a front elevation view with parts removed, illustrates part of the garment extender and garment of FIG. **2**;

FIG. **4**, in a top plan view, illustrates part of the garment and garment extender of FIG. **2**;

FIG. **5**, in a perspective view, illustrates an attachment part of the garment extender of FIG. **2**, the attachment being shown in an open configuration;

FIG. **6**, in a front plan view, illustrates the attachment of FIG. **5**;

FIG. **7**, in a front plan view, illustrates a linking portion part of the attachment of FIG. **5**;

FIG. **8**, in a top elevation view, illustrates the attachment of FIG. **5**, the attachment being shown in a closed configuration;

FIG. **9**, in a perspective view, illustrates an alternative attachment usable in the garment extender of FIG. **2**;

FIG. **10**, in a perspective view, illustrates an other alternative attachment usable in the garment extender of FIG. **2**;

FIG. **11**, in a perspective view, illustrates yet an other alternative attachment usable in the garment extender of FIG. **2**;

FIG. **12**, in a perspective view, illustrates yet an other alternative attachment usable in the garment extender of FIG. **2**;

FIG. **13**, in a front elevation view, illustrates the garment and garment extender of FIG. **2** with part of the garment extender between two garment slide fasteners removed;

FIG. **14**, in a top plan view, illustrates yet another attachment usable in the garment extender of FIG. **2**;

FIG. **15**, in a perspective view, illustrates an attachment string including a flexible link to which are secured a series of the attachments of FIG. **14**;

FIG. **16**, in a partial perspective view, illustrates a portion of the attachment string of FIG. **15**

FIG. **17**, in a rear elevation view, illustrates part of the garment of FIG. **2** and a garment extender similar to the garment extender of FIG. **2**, in which the attachments are the attachments of FIG. **14** linked to each other in the attachment string of FIGS. **15** and **16**, with a part of the garment extender between two garment slide fasteners removed;

FIG. **18**, in a side elevation view, illustrates the attachment strip of FIGS. **15** and **16** with the flexible link folded over itself at a link end thereof;

FIG. **19**, in a side elevation view, illustrates a clip usable in conjunction with the attachments of FIG. **14**, the clip being shown in an open configuration;

FIG. **20**, in a side elevation view, illustrates the clip of FIG. **19**, the clip being shown in a closed configuration;

FIG. **21**, in a perspective view, illustrates an attachment string in accordance with another embodiment of the present invention;

FIG. **22**, in a front elevation view with parts removed, illustrates part of an alternative garment extender attached to the garment of FIG. **2**;

FIG. **23**, in a perspective view, illustrates an attachment part of the garment extender of FIG. **22**;

FIG. **24**, in a top cross-sectional view midway through the attachment of FIG. **23**, illustrates the garment extender of FIG. **22**;

FIG. **25**, in a perspective cross-sectional view, illustrates part of the garment extender of FIG. **22** attached to the garment of FIG. **2**;

FIG. **26**, in a side elevation view, illustrates an alternative attachment usable in the garment extender of FIG. **25**;

FIG. **27**, in a partial top plan view, illustrates a foldable material part of the garment extender of FIG. **22**, here shown prior to assembly of the garment extender;

FIG. **28**A, in a schematic top cross-sectional view, illustrates a step performed when mounting the attachment of FIG. **23** to the foldable material of FIG. **27**;

FIG. **28**B, in a schematic top cross-sectional view, illustrates another step performed when mounting the attachment of FIG. **23** to the foldable material of FIG. **27**;

FIG. **28**C, in a schematic top cross-sectional view, illustrates yet another step performed when mounting the attachment of FIG. **23** to the foldable material of FIG. **27**;

FIG. **28**D, in a schematic top cross-sectional view, illustrates yet another step performed when mounting the attachment of FIG. **23** to the foldable material of FIG. **27**;

FIG. **28**E, in a schematic top cross-sectional view, illustrates yet another step performed when mounting the attachment of FIG. **23** to the foldable material of FIG. **27**;

FIG. **29**, in a top elevation view, illustrates another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **30**, in a top elevation view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **31**, in a top elevation view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **32**, in a top elevation view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **33** in a top elevation view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **34**, in a top elevation view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **35**, in a top elevation view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **36**, in a top elevation view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **37**, in a top elevation view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **38**, in a front elevation view with parts removed, illustrates a locking clip usable with the garment extender of FIG. **22**;

FIG. **39**, in a front elevation view, illustrates an alternative locking clip usable with the garment extender of FIG. **22**;

FIG. **40**, in a perspective view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **41**, in top cross-sectional view midway therethrough, illustrates the attachment of FIG. **40**;

FIG. **42**, in a perspective view, illustrates part of an alternative foldable material usable with the attachment of FIG. **41**;

FIG. **43**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIGS. **40** and **41** mounted to the foldable material of FIG. **42**;

FIG. **44**, in a perspective view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **45**, in top plan view, illustrates the attachment of FIG. **44**;

FIG. **46**, in top cross-sectional view adjacent a top end of the attachment, illustrates the attachment of FIGS. **44** and **45** mounted to the foldable material of FIG. **27**;

FIG. **47**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **48**, in top cross-sectional view midway therethrough, illustrates the attachment of FIG. **47**;

FIG. **49**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIGS. **47** and **48** mounted to the foldable material of FIG. **42**;

FIG. **50**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **51**, in top cross-sectional view midway therethrough, illustrates the attachment of FIG. **50**;

FIG. **52**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIGS. **50** and **51** mounted to the foldable material of FIG. **42**;

FIG. **53**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **54**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIG. **53** mounted to an alternative foldable material shown in FIG. **67**;

FIG. **55**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **56**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIG. **55** mounted to the foldable material of FIG. **27**;

FIG. **57**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **58**, in top cross-sectional view midway therethrough, illustrates the attachment of FIG. **57**;

FIG. **59**, in a perspective view, illustrates part of an alternative foldable material usable with the attachment of FIGS. **57** and **58**;

FIG. **60**A, in top cross-sectional view midway through the attachment, illustrates the attachment of FIGS. **57** and **58** mounted to the foldable material of FIG. **59**;

FIG. **60**B, in top cross-sectional view midway through the attachment, illustrates the attachment of FIGS. **57** and **58** mounted to the foldable material of FIG. **42**;

FIG. **61**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **62**, in top cross-sectional view midway therethrough, illustrates the attachment of FIG. **61**;

FIG. **63**, in a perspective view, illustrates part of an alternative foldable material usable with the attachment of FIGS. **61** and **62**;

FIG. **64**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIGS. **61** and **62** mounted to the foldable material of FIG. **63**;

FIG. **65**, in a perspective view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **66**, in top cross-sectional view midway therethrough, illustrates the attachment of FIG. **65**;

FIG. **67**, in a perspective view, illustrates part of the foldable material of usable with the attachment of FIGS. **65** and **66** and with the attachment of FIG. **54**;

FIG. **68**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIGS. **65** and **66** mounted to the foldable material of FIG. **67**;

FIG. **69**, in a perspective view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **70**, in top cross-sectional view midway therethrough, illustrates the attachment of FIG. **69**;

FIG. **71**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIGS. **69** and **70** mounted to the foldable material of FIG. **27**;

FIG. **72**, in a perspective view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **73**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIG. **72** mounted to an unpierced foldable material;

FIG. **74**, in a perspective exploded view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **75**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIG. **75** mounted to the foldable material of FIG. **59**;

FIG. **76**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**, the attachment being shown in a first configuration;

FIG. **77**, in top cross-sectional view midway therethrough, illustrates the attachment of FIG. **76**, the attachment being shown in a second configuration;

FIG. **78**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIGS. **76** and **77** mounted to an unpierced foldable material;

FIG. **79**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **80**, in a perspective view, illustrates part of another alternative foldable material;

FIG. **81**, in a perspective view, illustrates the foldable material of FIG. **80** folded over itself prior to mounting the attachment of FIG. **79** thereto;

FIG. **82**, in top cross-sectional view midway through a prong of the attachment, illustrates the attachment of FIG. **79** mounted to the foldable material of FIGS. **80** and **81**;

FIG. **83**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **84**, in top cross-sectional view midway therethrough, illustrates the attachment of FIG. **83**;

FIG. **85**, in top cross-sectional view midway through the attachment, illustrates the attachment of FIGS. **83** and **84** mounted to the foldable material of FIG. **27**;

FIG. **86**, in top cross-sectional view midway through the attachment, illustrates an alternative manner of mounting the attachment of FIG. **29** to the foldable material of FIG. **27**;

FIG. **87**, in top cross-sectional view midway through a prong of the attachment, illustrates an alternative manner of mounting the attachment of FIG. **79** to two unpierced foldable materials;

FIG. **88**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **89**, in top cross-sectional view midway therethrough, illustrates the attachment of FIG. **88** mounted to an alternative foldable material;

FIG. **90**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **91**, in a perceptive view, illustrates yet another alternative attachment usable in the garment extender of FIG. **22**;

FIG. **92**, in top cross-sectional view midway therethrough, illustrates the attachment of FIG. **91** partially mounted to an alternative foldable material; and

FIG. **93**, in top cross-sectional view midway therethrough, illustrates the attachment of FIGS. **91** and **92** mounted to the alternative foldable material shown in FIG. **92**.

DETAILED DESCRIPTION

The term "substantially" is used throughout this document to indicate variations in the thus qualified terms. These variations are variations that do not materially affect the manner in which the invention works and can be due, for example, to uncertainty in manufacturing processes or to small deviations from a nominal value that do not cause significant changes to the invention. These variations are to be interpreted from the point of view of the person skilled in the art.

FIG. **1** illustrates a conventional garment **12**, here shown in the form of a jacket, although alternative garments **12** are within the scope of the appended claims. The garment **12** has a garment slide fastener **14**. The garment slide fastener **14** has a pair of substantially elongated stringer tapes **16** supporting each a row of teeth **18** extending longitudinally therealong. The stringer tape **16** is a ribbon of any suitable material, such as, non-limitingly, webbing. The garment slide fastener **14** also has a slider **20** movable along the rows of teeth **18** in a reciprocating movement for selectively attaching the teeth **18** of both rows to each other when moved in a closing direction and selectively detaching the teeth **18** of both rows from each other when moved in an opening direction opposed to the closing direction. Such

slide fasteners are conventional and the garment slide fastener **14** is not described in further details herein.

Referring to FIG. **2**, a garment extender **10** is attachable to the garment slide fastener **14** to allow extension of the garment **12**. For example, the garment extender **10** is usable with a garment **12** in the form of a jacket to leave room for the expanding belly of a pregnant woman or to allow a parent to carry a baby in a baby carrier. However, the garment extender **10** is usable for any other suitable purpose. In some embodiments, the garment extender **10** is attached between spaced apart stringer tapes **16** of the garment slide fastener **14**. In other embodiments, for example if the garment extender **10** is used with pants, the stringer tapes **16** are not separated completely along their whole length. Instead, the stringer tapes **16** form a V-shaped gap therebetween in which the garment extender **10** may be positioned (not shown in the drawings).

The garment extender **10** includes a body **21** and at least one attachment **22**, some of which are seen for example in FIG. **3**. The body **21** includes one or more elements that are positioned in the gap between the stringer tapes **16** of the garment slide fastener **14**. In a typical embodiment, the body **21** includes one or more panels of fabric, and, in some embodiment, insulating material. Referring to FIG. **2**, The body **21** defines substantially opposed body first and second side edges **24** and **26** and opposed body top and bottom edges **28** and **30** extending each between the body first and second side edges **24** and **26**.

Each of the body first and second side edges **24** and **26** is typically provided with at least one respective attachment **22**. In some embodiments, each of the body first and second side edges **24** and **26** is provided with a respective plurality of the attachments **22** spaced apart from each other along the body first and second side edges **24** and **26**. For example, the attachments **22** are part of two attachment strings **32**, each attachment string **32** including attachments **22** linked to each other and secured to one of the body first and second side edges **24** and **26**. However, in other embodiments, the attachments **22** are each separately secured to the body **21**. In other embodiments, only one attachment **22** is provided at each of the body first and second side edges **24** and **26**.

Referring for example to FIG. **5**, each of the attachments **22** includes attachment inside and outside portions **34** and **36**. The attachment inside portion **34** includes an inside gripping portion **38** and an inside channel forming portion **40**. The attachment outside portion **36** includes an outside gripping portion **42** and an outside channel forming portion **44**. As seen in FIG. **4**, when the attachment **22** is operatively secured to the garment slide fastener **14**, the inside and outside gripping portions **38** and **42** grip a gripped portion **46** of one of the stringer tapes **16** therebetween, and the inside and outside channel forming portions **40** and **44** define a channel **49** receiving thereinto the teeth **18** that are supported by the stringer tape **16** adjacent the gripped portion **46**. The attachment **22** thus secures the garment extender **10** to the garment slide fastener **14**.

Typically, the attachments **22** are removably attachable to the garment slide fastener **14**. However, attachments **22** that permanently attach to the garment slide fastener **14** are within the scope of the present invention. In some embodiments, the attachment inside and outside portions **34** and **36** are movable relative to each other between a closed configuration, seen for example in FIG. **8**, and an open configuration, seen for example in FIG. **5**. The attachment **22** is in the closed configuration when the attachment **22** is attached to the garment slide fastener **14**. The inside and outside gripping portions **38** and **42** are spaced apart from each other to a greater extent in the open configuration than in the closed configuration to allow detachment of the attachment **22** from the garment slide fastener **14**.

In some embodiments (not shown in the drawings), the attachment inside and outside portions **34** and **36** are biased towards each other towards the closed configuration, for example by being mounted to a spring or other biasing element. In other embodiments, as in the attachment **22** shown in the drawings, each attachment **22** further includes a lock **48** for selectively locking the attachment **22** in the closed configuration. For example, the lock **48** prevents the attachment inside and outside portions **34** and **36** from moving from the closed configuration to the open configuration unless a predetermined force moving the attachment inside and outside portions **34** and **36** away from each other is exerted. In some embodiments, the predetermined force is such that the lock **48** unlocks if forces that could cause damage to the garment slide fastener **14** were exerted on the garment extender **10**.

A specific example of the lock **48** includes lock inside and outside elements **50** and **52** provided respectively in the attachment inside and outside portions **34** and **36**. The lock inside and outside elements **50** and **52** are complementarily shaped to snap to each other in the closed position. However, in alternative embodiments, any other suitable lock is used. For example, a lock using magnets is within the scope of the invention, magnets of opposing polarity facing each other in the attachment inside and outside portions **34** and **36** in the closed position. In yet other embodiments, the lock includes a biasing element, such as a spring, extending between the attachment inside and outside portions **34** and **36** and biasing the attachment inside and outside portions **34** and **36** towards the closed position.

For the purpose of this document, the term "snap" refers to a structure and an action in which one part defines a recess accessed through an opening narrower than deeper parts of the recess. Another part includes a pin that has a portion that is slightly larger than the opening. At least one of, and in some cases both, the pin and the opening is resiliently deformable so that when a suitable force is exerted pushing the pin into the recess, deformation occurs so that the portion that is slightly larger than the opening is allowed to move past the opening. Then, the pin and opening, reverse at least partially this deformation, with the portion that is slightly larger than the opening received in the recess, which locks the pin in the recess.

In a specific embodiment of the invention, the inside channel forming portion **40** is between the inside gripping portion **38** and lock inside element **50** and the outside channel forming portion **44** is between the outside gripping portion **42** and lock outside elements **52**.

In a very specific embodiment of the invention, the attachment inside and outside portions **34** and **36** are formed of a relatively rigid polymer and structured as follows. In this specific embodiment, the attachment inside and outside portions are identical, and only one of them, the attachment inside portion **34**, is described in details.

Referring to FIG. **6**, the attachment inside portion **34** includes a base **54**, which is for example plate-shaped. The inside gripping portion **38** is a flange extending from the base **54**. The flanges of the attachment inside and outside portions **34** and **36** face each other and grip the stringer tape **16** therebetween in the closed configuration. For example, this flange has a length sufficient to extend along a few teeth **18** of the garment slide fastener **14** to distribute stresses exerted on the garment slide fastener **14** over a relatively large portion of the garment slide fastener **14** when the

garment extender **10** is in use to reduce possibilities of damaging the garment slide fastener **14**.

The lock inside element **50** includes a locking element base **56** extending substantially parallel to the inside gripping portion **38**, spaced apart therefrom. The inside channel forming portion **40** is delimited by the locking element base **56** and inside gripping portion **38**. In some embodiments, the locking element base **56** and inside gripping portion **38** protrude at about the same height from the base **54**.

The lock inside element **50** also includes a recess **58** extending in the base **54**, accessed through an opening **60** that is at least slightly narrower than the remainder of the recess **58**. Furthermore, the lock inside element **50** includes a prong **62** protruding from the base **54**. The prong **62** includes a prong wider portion **64** that is slightly larger than the opening **60**. The prong **62** and recess **58** are positioned such that when two of the lock inside elements **50** are positioned so that their inside gripping portions **38** face each other, the prong **62** of one of the lock inside elements **50** faces the recess **58** of the other one of the lock inside elements **50**, so that the prongs **62** can engage the recesses **58**. The recesses **58** and prongs **62** are configured and sized, and have mechanical properties, such that the above-described snap action occurs when the prongs **62** are pushed into the recesses **58**.

In some embodiments, the attachment inside and outside portions **34** and **36** could be each attached, for example using glue, to the body **21**. However, in some embodiments, the attachment **22** includes an attachment linking portion **66** (seen in FIG. **6** for example) linking the attachment inside and outside portions **34** and **36** to each other. Such a structure facilitates alignment between the attachment inside and outside portions **34** and **36** to achieve the closed configuration. For example, the attachment inside and outside portions **34** and **36** are more rigid than the attachment linking portion **66**. The latter is for example relatively flexible to relatively easily allow movements between the open and closed configurations.

Referring to FIG. **7**, for example, the attachment linking portion **66** is substantially panel shaped and defines inside and outside portion apertures **70** and **72** respectively receiving the attachment inside and outside portions **34** and **36** (not seen in FIG. **7**) thereinto. The attachment linking portion **66** may be made of a polymer overmolded on the attachment inside and outside portions **34** and **36**. In some embodiments, as seen in FIG. **6** for example, the attachment linking portion **66** defines at least one groove **74** thereinto, for example two grooves **74**, between the inside and outside portion apertures **70** and **72** for facilitating hinging between the attachment inside and outside portions **34** and **36**.

In some embodiments, the attachment linking portion **66** is soft enough to allow sewing the attachment linking portion **66** to pieces of fabric. This is advantageous as sewing is a robust and relatively low cost method of attaching components that is well understood in the garment industry.

Referring to FIG. **4**, when the attachments **22** are provided in attachment strings **32**, the attachment strings **32** may be formed as follows. Each string of attachments includes inside and outside strips **76** and **78**, made of a suitable fabric. The inside and outside strips **76** and **78** extend between the attachments **22** and the body **21**. The inside and outside strips **76** and **78** may be formed of a single piece of material folded along a fold **80** separating the inside and outside strips **76** and **78** from each other. In alternative embodiments, the inside and outside strips **76** and **78** are made of two different pieces of material. The attachment linking portion **66** of each attachment **22** is secured to the inside and outside strips **76** and **78** and the inside and outside strips **76** and **78** are secured to the body **21**. For example, the inside and outside strips **76** and **78** extend generally parallel to each other.

The inside strip **76** has an inside strip side edge **82**, opposed to the fold **80** and the outside strip **78** has an outside strip side edges **86**, opposed to the fold **80**. Adjacent the fold **80**, the inside and outside strips **76** and **78** overlap one of the body first and second side edges **24** and **26**, the body first side edge **24** being shown in FIG. **4**. Part of the body **21** is secured to the inside and outside strips **76** and **78**. This layered structure including the inside and outside strips **76** and **78** with part of the body **21** therebetween can be sewn or assembled in any other suitable manner.

The attachments **22** are provided between the inside and outside strips **76** and **78**. In some embodiments, the inside and outside strips **76** and **78** are folded over the attachment linking portion **66** adjacent the inside and outside strips side edges **82** and **86** and the layered structure formed of part of one of the inside and outside strips **76** and **78**, the attachment linking portion **68** and another part of the same one of the inside and outside strips **76** and **78** is sewn together, or otherwise secured, for example using glue or rivets, among other possibilities.

As seen in FIG. **2**, in some embodiments, the body **21** is provided with at least one extender slide fastener **88** extending between the body top and bottom edges **28** and **30**, which allows opening the garment **12** without removing the garment extender **10**. In some embodiments, the garment extender **10** is provided with a pair of laterally spaced apart extender slide fasteners **88** extending between the body top and bottom edges **28** and **30**. This allows removal of part of the garment extender **10**, the part between the two extender slide fasteners **88**, as seen in FIG. **13**, while preserving the ability to close and open the garment **12**. Also, many different pieces of materials securable to the extender slide fasteners **88** having different widths could be provided to adjust the garment extender **10** to different sizes. In some embodiments, the removable portion includes a wider portion and a narrower portion. When the wider portion is worn over the belly of a pregnant woman, the garment extender **10** may be used to accommodate the expanding belly of the pregnant woman. When the wider portion is worn over the chest of an intended user, which may be achieved by mounting the garment extender **10** upside down with respect to the orientation in which the wider portion is over the belly, a baby carrier carrying a baby may be worn in register with the chest of the intended user and the garment extender **10** may then accommodate the additional volume occupied by the baby and baby carrier.

FIG. **9** illustrates another attachment **122** usable instead of the attachment **22** in the garment extender **10**. The attachment **122** differs from the attachment **22** in that the attachment inside and outside portions **134** and **136** have lock inside and outside elements **150** and **152** that differ from the lock inside and outside elements **50** and **52**. More specifically, while still employing the "snap" principle, the lock inside and outside elements **150** and **152** don't include the locking element base **56**. Instead, the lock inside and outside elements **150** and **152** have a structure similar to that of a conventional push button used commonly in the garment industry. Also, the attachment inside and outside portions **134** and **136** are not identical as they each include a single element part of the conventional push button structure, which need to be complementarily shaped to the other element of the conventional push button structure. In alter-

native embodiments, the same push button structures are used, but two of them are present on each of the attachment inside and outside portions **234** and **236**, as seen in FIG. **10** for the attachment **222**.

FIG. **11** illustrates yet another attachment **322** usable instead of the attachment **22** in the garment extender **10**. The attachment **322** differs from the attachment **22** in that the lock inside and outside elements **350** and **352** differ from the lock inside and outside elements **50** and **52**. One of the lock inside and outside elements **350** and **352** include at least one deformable elongated tongue **390** provided with a ledge **392** generally transversal to the tongue **390**. The tongue **390** is insertable in a recess **394** of the other one of the lock inside and outside elements **350** and **352** by resiliently deforming the tongue **390** until the tongue **390** has been inserted enough that it can spring back to its undeformed configuration with the ledge **392** abutting against a correspondingly shaped portion of the recess **394** so that removal of the tongue **390** from the recess **394** requires deformation of the tongue **390** to retract the ledge **392** so that the later can be retracted from the recess **394**. In other embodiments, the tongue **390** deforms enough to be removed from the recess **394** when enough pulling force is exerted thereonto. The attachment **322** includes a pair of tongues **390** and recess **394**.

FIG. **12** illustrates yet another attachment **422** usable instead of the attachment **22** in the garment extender **10**. The attachment **422** is similar to the attachment **322** except that it includes only one tongue **490** and one recess **494**, which are longer than the tongue **390** and recess **394**. Also, the attachment **422** includes inside and outside gripping portions **438** and **442** that are provided with teeth **443** to better grip the stringer tapes **16**.

FIGS. **14** to **20** present various aspects related to yet another attachment **522** usable instead of the attachment **22** in an alternative garment extender **510**, the latter being shown in FIG. **17**. Typically, but not necessarily, a plurality of attachments **522** are used to secure the body **521** to the garment **12**, as in the garment extender **10**. The attachments **522** could be individually secured to the body **521**, for example using stitches, rivets or an adhesive. However, in some embodiments, the attachments **522** are linked to each other in an attachment string **532** through a flexible link **533**, as shown in FIG. **15** for example and further described hereinbelow.

Referring to FIG. **16**, each of the attachments **522** defines a channel **549** defining a channel axis **551** extending substantially parallel to one of the body first and second side edges **24** or **26** at which the attachment **522** is provided, as seen in FIG. **17**. Returning to FIG. **16**, each of the attachments **522** also define a slit **553** parallel to the channel axis **551** and leading laterally into the channel **549** along the whole channel **549**. As seen in FIG. **14**, the slit **553** of each attachment **522** faces away from the body **521**.

As seen in FIG. **16**, each slit **553** is defined between a pair of slit edges **555** and **557**. Each slit **553** defines axially opposed slit end portions **559** and **561** and a slit intermediate portion **563** therebetween. At least one of the slit edges **555** and **557**, for example both slit edges **555** and **557** as seen in FIG. **16**, is bevelled in the slit end portions **559** and **561** so that an axial access to the slit **553** is tapered towards the slit intermediate portion **563**. This configuration facilitates sliding the attachments **522** along the stringer tapes **16**.

In some embodiments, the attachments **522** may be slightly flexible so that the slit **553** may be widened slightly against a biasing force forcing the slit edges **555** and **557** away from each other when the stringer tape **16** is inserted thereinto, so that the attachments **522** engage the stringer tape **16** with a small axial friction force. In other embodiments, the slits **553** are be wider than the typical thickness of the stringer tape **16**.

As seen in FIG. **14**, the attachments **522** may have a substantially C-shaped transversal cross-sectional configuration. With the attachments **522** operatively secured to the garment slide fastener **14**, the slit **553** of each attachment **522** receives thereinto a gripped portion **46** of one of the stringer tapes **16** therebetween and the channel **549** of the attachment **522** receives thereinto the teeth **18** that are supported by the stringer tape **16** adjacent the gripped portion **46**.

It should be noted that in opposition to the attachments **22**, the attachments **522** typically don't grip the stringer tapes **16** with a large force, but are movable therealong by exerting a relatively small force. Thus, the gripping force is such that friction between the attachments **522** and the stringer tapes **16** is relatively low. As described hereinbelow, in some embodiments, a clip **538** (seen in FIG. **17** for example) is used to prevent the attachments **522** from sliding out of the stringer tape **16**. However, in alternative embodiments, the attachments **522** grip the stringer tape **16** with enough force that the clip **538** is not required. Also, the channel **549** has a transversal cross-sectional configuration such that the teeth **18** of commercially available slide fasteners **14** may be freely received thereinto with minimal or no friction.

To ensure that the teeth **18** cannot exit the attachment **522** through the slit **553**, the latter has a relatively narrow width, and, when the attachments **522** are deformable, the attachment **522** is rigid enough to prevent excessive deformation that would allow such movement of the teeth **18** through the slit **553**.

With reference to FIG. **15**, the attachments **522** provided at at least one of the body first and second side edges **24** and **26**, and typically at both of the body first and second side edges **24** and **26**, are linked to each other in an attachment string **532** through a flexible link **533**. Typically, the flexible link **533** is less rigid than the attachments **522**. The attachments **522** are secured to the flexible link **533** in any suitable manner. For example, the attachments **522** are glued to the flexible link **533**. In other embodiments, the attachments **522** define a peripherally extending flange (not shown in the drawings) that is embedded in the flexible link **533**, for example by overmolding that latter over the attachments **522**, and more specifically the flanges. Any other suitable manner of securing the attachments **522** to the flexible link **533** is also within the scope of the invention.

As seen in FIG. **14**, the attachment string **532** may be secured to a strip **576** part of the body **521** and extending parallel to the flexible link **533**, similarly to the use of the strips **76** and **78** in the garment extender **10**. The strip **576** may be folded over itself at one strip side edge **582** thereof to form a fold **581** folding over the flexible link **533**. The folded strip **576** may be secured in any suitable manner to the flexible link **533**, for example using stitches, rivets or an adhesive, among other possibilities.

The attachments **522** include two opposed end attachments **522** and intermediate attachments **522** provided therebetween. In some embodiments, as seen in FIG. **18**, with the flexible link **533** folded over itself adjacent one link end **535** thereof, the end attachment **522** adjacent to that link end **535** is insertable between two adjacent ones of the intermediate attachments **522**. This is possible if the spacing between the end attachment **522** and the intermediate attachment **522** to which it is adjacent is large enough to allow such a fold and if the distance between the two intermediate

attachments is larger than the length of the end attachment **522**. This ability to fold over the attachment string **532** and insert the end attachment **522** between two intermediate attachments **522** is useful to shorten the attachment string **532** so that the attachment string **532** can be used with garment slide fasteners **14** of different lengths. Indeed, the folded over portion can be maintained folded by simply engaging the stringer tape **16** between the two intermediate attachments **522** with the end attachment **522**.

In some embodiments, a clip **538** is provided, as seen in FIG. **17**. The clip **538** is operable for gripping the stringer tape **16**. When the clip **538** grips the stringer tape, the attachment string **532**, and therefore the attachments **522** may be maintained at a fixed location relative thereto. This functionality may be achieved in many alternative manners. Two such manners are illustrated in FIG. **17**. It should be noted that in some embodiments, only one of these manners is implemented, at one or both sides of the garment extender **510**.

FIGS. **19** and **20** illustrate the clip **538**. The clip **538** is movable between open and closed configurations, shown respectively in FIGS. **19** and **20**. The clip **538** includes a pair of jaws **540** and **542** that are adjacent to each other in the closed configuration, and spaced apart from each other in the open configuration. The jaws **540** are operated using levers **544** and **546** extending respectively from the jaws **540** and **542**. The lever **546** extends integrally from the jaw **542** in the embodiment of the clip **538** shown in FIGS. **19** and **20**, but other types of levers are within the scope of the invention. The jaws **540** and **542** may be biased towards the closed configuration, for example using a biasing element, or the clip **538** may be configured so that when the jaws **540** and **542** are in the closed configuration, a minimal force is required to achieve the open configuration, so that the jaws are maintained in the closed configuration unless this minimal force is exerted. The jaws **540** and **542** may also be provided with protrusions **548** configured to engage or penetrate any piece of fabric or any soft material provided between the two jaws **540** and **542**. Examples of suitable clips **538** are provided in U.S. Pat. No. 8,806,726 issued Aug. 19, 2014 to Tien Chung Ent Co Ltd and in U.S. Pat. No. 7,979,965 issued Jul. 19, 2011 to Tien Chung Ent Co Ltd, the contents of which are hereby incorporated by reference in their entirety. However, any other suitable clip may be used.

Referring to FIG. **17**, the clip **538** may be secured to the remainder of the garment extender **510** in many different manners. For example, as shown for the bottom clip **538** in FIG. **17**, the clip **538** is secured to one of the body **521** and flexible link **533** between two adjacent ones of the attachments **522**. In FIG. **17**, the clip **538** is secured to the body **521** with the jaws **540** and **542** positioned between two attachments **522**. With the garment extender **510** operatively secured to the garment **12** (only partially shown in FIG. **17**), the clip **538** is operable for selectively and reversibly gripping one of the stringer tapes **16** between the two adjacent ones of the attachments **522**. When this is achieved, the attachments **522** are prevented from sliding along the stringer tapes **16** accidentally.

Another manner of providing the clip **538** is illustrated for the top clip **538** of FIG. **17**. The clip **538** is secured to the body **521**, for example using a small piece of rope **550**, one end of which being secured to the body **521**, and the other end of which being secured to the clip **538**. Thus, this clip **538** may be moved relative to the remainder of the garment extender **510**. The rope **550** is positioned and configured so that with the garment extender **510** operatively secured to the garment **12**, the clip **538** is operable for selectively and reversibly gripping jointly one of the flexible links **533** and one of the stringer tapes **16** adjacent to the one of the flexible link **533**. Indeed, in this configuration, when the attachments **522** receive therebetween the stringer tape **16**, the stringer tape **16** and flexible link **533** run parallel and adjacent to each other. The clip **538** can therefore receive between its jaws **540** and **542** the stringer tape **16** and flexible element **533**, for example at the top or bottom ends thereof.

While each side of the garment extender **510** is provided with only one clip **538** in FIG. **17**, it is within the scope of the invention to provide more than one clip **538** for each side of the garment extender **510**, for example one adjacent the top of the garment extender **510**, and one adjacent the bottom of the garment extender **510**, among other possibilities.

In use, the garment extender **510** is secured to the garment **12** by simply aligning the teeth **18** of one half of the slide fastener at one end thereof with one of the channels **549** of one of the end attachments **522** and pulling this end attachment **522** along the stringer tape **16**. As they reach the stringer tape **16**, the other attachments **522** may be automatically aligned with the stringer tape **16** if the flexible link **533** has enough rigidity, or may need a bit of adjustment by the intended user to be suitably aligned to suitably engage the stringer tape **16** with the teeth **18** positioned in the channel **549**. If needed, the flexible link **533** is folded over itself when the end of the attachment string **532** is reached so that the end attachment **522** can be suitably positioned to achieve the configuration of FIG. **18**. Then, the clip **538** is used to ensure that the attachments **522** remain fixed relative to the garment **12**. The other half of the garment extender **510** can be simultaneously secured to the garment **12** with the first half. In other embodiments, when the garment extender **510** includes two portions that can be detached from each other, each portion can be secured individually to the garment **12**, followed by attachment to each other of the two separated portions.

FIG. **21** illustrates another attachment string **632** usable in the garment extender **510** instead of the attachment string **532**. The attachment string **632** is very similar to the attachment string **532** except that it also includes a fixation attachment **622**, which is similar in shape and function to the attachments **22**, **122**, **222**, **322** and **422**. The fixation attachment **622** is secured to the flexible link **533** along the line defined by the attachments **522** in any suitable manner, for example through overmolding or use of an adhesive, among other possibilities. The attachment string **632** includes two fixation attachments **622**, but attachment strings **632** including only one fixation attachments **622** or more than two fixation attachments **622** are also possible. In use, the attachment string **632** is used similarly to the attachment string **532**, except that when the attachment string **632** is properly positioned, the fixation attachment **622** is closed to securely grip the stringer tape **16**. In such embodiments, the clips **538** may not be required and may be omitted.

In alternative embodiments, referring to FIG. **22**, attachment strings **732** include attachments **722** that are mounted to attachment mounts **733**. Attachment mounts **733** are, for example, provided each at a respective one of the extender body first and second side edges **24** and **26** (only the first one being shown in FIG. **22**). The attachment strings **732** are usable with any suitable body **21** and **521** described hereinabove, or with any other suitable alternative body.

The attachments **722** are at least partially embedded in a foldable material **735** part of the attachment mounts **733**. In some embodiments, the attachment mounts **733** are entirely made of the foldable material **735**, but in other embodi-

ments, the attachment mount **733** may include other elements. The attachments **722** are more rigid than the foldable material **735**. For example, the foldable material **735** includes a cloth or fabric. In some embodiments, most of or all the parts of the attachment **722** that are exposed to the intended user of the attachment string **732** are covered by the foldable material **735**. Advantageously, this improves the aesthetics of the attachment string **732**. Also, since the attachment strings **732** may be used in a baby carrying context, this configuration may protect a carried baby from exposure to relatively rigid and irritating attachments **722**. Furthermore, the foldable material **735** may improve the seal between the attachment string **732** and the slide fastener **14**, reducing cold air infiltration in the garment **12**. The foldable materials, such as foldable material **735**, used in garment extenders described hereinbelow is represented schematically as a single line, with no thickness, to reduce clutter in the drawings and facilitate understanding of the structure of the garment extender. However, the foldable material **735** and all the other foldable materials may have any suitable thickness.

The attachments **722**, and all the other attachments described hereinbelow, may be slightly flexible, similarly to the attachment **522**, or may be stiffer so as to deform with difficulty in normal use. Also, similarly to the attachment **22**, the attachments **722**, and the other attachments described hereinbelow, may be used individually, in other words one attachment **722** attached to the garment slide fastener **14**, or in a plurality, in the attachment string **732**.

Referring to FIG. **23**, the attachment **722** includes an attachment body **740** and a pair of jaws **742** extending from the attachment body **740**, each jaw **742** terminating at a respective jaw free end **746**. The jaws **742** delimit a channel **748** therebetween opened at both channel ends thereof and the jaw free ends **746** define a slit **750** therebetween leading to the channel **748**. In that respect, the attachment **722** acts similarly to the attachment **522** described hereinabove. Each jaw **742** defines opposed jaw inner and outer surfaces **752** and **754**, the jaw inner surfaces **752** facing each other and delimiting the channel **748**. Typically, the channel **748** is wider than the slit **750**.

Referring to FIG. **24**, each attachment mount **733** includes a foldable material **735**, and is typically made entirely of the foldable material **735**. The foldable material **735** may be formed by a single continuous sheet of the foldable material **735**, or by many such sheets secured to each other and to the attachment **722**. The attachments **722** are mounted to the attachment mount **733** with the foldable material **735** running along the jaws **742** so that the jaw inner surfaces, outer surfaces and free ends **752**, **754** and **746** are covered by the foldable material **735**.

With the attachments **722** operatively secured to the garment slide fastener **14**, the slit **750** of each attachment **722** receives thereinto a gripped portion **46** of one of the stringer tapes **16** and the channel **748** of each attachment **722** receives thereinto the teeth **18** that are supported by the stringer tape **16** adjacent the gripped portion **46**. The foldable material **735** is present between the jaws inner surfaces **752** and the teeth **18** and between the stringer tape **16** and the jaw free ends **746**. In such embodiments, the foldable material **735** may increase friction between the attachment string **732** and the stringer tape **16** so that the attachment string **732** grips the stringer tape **16** better than in the case in which similar attachments **722** are not covered with the foldable material **735**.

In a specific embodiment of the invention, the attachment body **740** defines a body central portion **758** from which the jaws **742** extend. For example the body central portion **758** is substantially plate-shaped and perpendicular to the jaws **742**, but any other suitable configuration is within the scope of the invention. The foldable material **735** defines a pair of apertures **760**, an inter-aperture portion **762** therebetween and a pair of extra-aperture portions **764** extending away from each other from a respective one of the apertures **760** opposed to the inter-aperture portion **762**. The attachments **722** are mounted to the foldable material **735** with the body central portion **758** inserted through both apertures **760**, the extra-aperture portions **764** each extending from a respective one of the apertures **760** to cover a respective one of the jaws **742**. More specifically, the extra-aperture portions **764** each extend along a respective one of the jaw inner surfaces **752**, jaw free ends **746** and jaw outer surface **754**.

In some embodiments, a pair of arms **766** extend from the body central portion **758** away from the jaws **742** and at least part of the inter-aperture portion **762** is received between the arms **766**. Also, in some embodiments, the extra-aperture portions **764** further extend over the attachment body **740** and are joined to each other so that the attachments **722** are contained in a cavity **768** defined by the foldable material with only the body central portion **758** protruding out of the cavity **768**. Since the body central portion **758** is in the channel **748**, in use, when attached to a garment **12**, the attachments **722**, which are typically made of a suitable polymer or metal, have no exposed part and therefore present a more pleasing aesthetic aspect and cannot directly contact skin or other surfaces. In such embodiments, the extra-aperture portions **764** may be sewn together, along with the body **21** at one of the body first and second side edges **24** and **26**, thereby securing the attachment string **732** to the body **21**. In some embodiments, the foldable material **735** has one end portion thereof folded over the other one prior to sewing to the body **21**.

FIGS. **27**, **28**A to **28**E and **24** illustrate a method of attaching the attachments **722** to the foldable material **735**. FIG. **27** illustrates the foldable material **735** in the form of a piece of cloth into which pairs of apertures **760** have been formed, which are slit-shaped for example. The pairs of apertures **760** have been provided at longitudinally spaced apart locations along the foldable material **735**. Each pair of apertures **760** is used to mount a respective attachment **722** to the foldable material **735**.

As seen in a schematic cross-section along line XXVIII-XXVIII of FIG. **27**, the foldable material **735** is first laid flat, as shown in FIG. **28**A, and then folded over itself in the inter-aperture portion **762**, as seen in FIG. **28**B, for example along the whole length of the foldable material **735**, so that the apertures **760** within each pair are in register with each other. Then, one of the jaws **742** is inserted through both apertures **760**. The foldable material **735** is then slid over the whole jaw **742**, as seen in FIG. **28**D and over one of the arms **766**, as seen in FIG. **28**E, until the inter-aperture portion **762** is located between the two jaws **742**. Subsequently, the extra-aperture portions **764** are folded over the jaw outer surfaces **754** and joined to each other and to the body **21**, for example using stitches, as seen in FIG. **24**. It should be noted that this manner of manufacturing the attachment string **32** uses no glue and no fastener, and only a single piece of foldable material **735**. It can therefore be efficiently implemented for mass production.

The attachments **722** may have a uniform cross-sectional configuration along their whole length, in other words along the channel **748**, so that they can be manufactured by cutting a suitably shaped extrusion at regular intervals. In other embodiments, as seen in FIG. **26**, the slit **750***a* of an

alternative attachment **722***a* is flared at both ends **753***a* thereof, similarly to the attachment **522**. Other suitable configurations are also within the scope of the invention. Many alternatives to the attachment **722** are described hereinbelow. Only the differences between these alternatives and the attachment **722** are described in details and it should be assumed that unless otherwise mentioned, an alternative is to be presumed to work similarly to the base embodiment to which it is compared.

The attachment **722** has a pair of jaws that each have a substantially L-shaped transversal configuration, with two proximal portions extending from the attachment body **740** parallel to each other and distal portions extending perpendicular to the proximal portions and towards each other to define the slit **750**. However, in other embodiments, as seen for example respectively for attachments **722***b* and **722***j* in FIGS. **33** and **37**, one of both of the jaws **742***b* and **742***j* has a substantially arcuate transversal cross-sectional configuration. In the latter case, both jaws **742***j* and the attachment body **740***j* are arcuate, so that the attachment **722***j* as a whole has a substantially arcuate configuration, traversing most of a circle. In the case of the attachment **722***b* the other jaw **743***b* has a substantially rectilinear transversal cross-sectional configuration.

The arms **766** may also have various configurations. In the attachment **722**, as seen in FIG. **23**, the arms **766** are rectilinear and are angled so as to converge towards each other in a direction leading away from the body central portion **758**. However, as seen for attachment **722***f* of FIG. **29**, the arms **766** may be omitted in some embodiments. In other embodiments, as seen for attachment **722***g* and **722***h* of respectively FIGS. **30** and **31**, the arms **766***g* and **766***h* may be rectilinear and parallel to each other. The arms **766***g* extend each opposed and in register with a respective one of the jaws **742**, or may be located inwardly relative to the jaws **742**. In yet other embodiments, the arms **766***i* are L-shaped, similarly to the jaws **742**. As seen in FIG. **33** for attachment **722***b*, in some embodiments only one arm **766***b* is provided. In other embodiments, as seen for attachment **722***c* of FIG. **34**, two rectilinear arms **766***c* diverging from each other are provided. However, converging arms **766***d*, seen in FIG. **35** for attachment **722***d* having a curved jaw **742***d*, or parallel arms **766***e*, seen in FIG. **36** for attachment **722***e* having a curved jaw **742***e* are usable. The various configurations of the arms **766** to **766***i* described above are selected according to the properties of the foldable material **735** so that the attachments **722** to **722***j* are properly held in place in the foldable material **735** while being relatively easy to attach thereto.

Referring to FIG. **38**, in some embodiments, a locking clip **780** is provided. The locking clip **780** defines a clip body **782** and a locking portion **784** extending from the clip body **782**. The locking portion **784** is removably insertable in the channel **748** when the attachment **722** is operatively attached to the garment slide fastener **14**. The locking portion **784** increases frictional forces between the attachment mount **733** (not seen in FIG. **38**) and the garment slide fastener **14** relative to a configuration in which the locking portion **784** is outside of the channel, helping in ensuring that the garment extender **10** remains fixed relative to the garment **12**. It should be noted that the presence of the foldable material **735** (not shown in FIG. **38** for clarity) in the channel **748** is advantageous as this foldable material will provide a cushioning effect that allows use of a single locking clip **780** with teeth **18** of various dimensions.

For example, the locking portion **784** is rectilinear and the clip body **782** is substantially C-shaped and defines clip body first and second ends **786** and **788**. The locking portion **784** extends from the clip body **782** at the clip body first end **786**. There is a gap **790** between the clip body second end **788** and the locking portion **784**. The locking clip **780** is for example made of a resiliently deformable material, such as a suitable polymer or metal. The locking clip **780** is configured so that the locking portion **784** can be slid along the channel **748** until the gap **790** is outside of the channel **748**, at which point the locking clip **780** can be deformed so that the clip body second end **788** clears the attachment **722**, which allows removal of the locking portion **784** from the channel **748** by sliding the locking portion **784** therealong. Attachment of the clip **780** proceeds by following these steps in reverse. The locking clip **780** is configured so that it remains secured to the attachment **722** unless the gap **790** is positioned outside of the channel **748**. For example, the clip is configured so that unless sufficient external forces are exerted thereonto, the gap **790** remains inside the channel **748**. As seen in FIG. **39**, in alternative embodiments, a locking clip **780***a* has a clip body **782***a* defining an aperture **792***a* thereinto, allowing to secure the locking clip **780***a* to the garment extender **10** using a rope or in any other suitable manner (not shown in the drawings) so that the locking clip **780***a* is less likely to be lost.

FIGS. **40** and **41** illustrate yet another attachment **722***k* that omits the arms **766**. Instead, a prong **766***k* extends from the body central portion **740***k* opposed to the jaws **742***k*. As seen in FIG. **42**, the foldable material **735***k* defines a prong receiving aperture **761***k* in the inter-aperture portion **762***k*. When the attachment **722***k* is mounted to the foldable material **735***k* similarly to the manner described hereinabove with respect to the attachment **722**, the prong **766***k* protrudes through the prong receiving aperture **761***k*, as seen in FIG. **43**, which helps in maintaining the attachment **722***k* at a suitable location in the foldable material **735***k*. In some embodiments, the prong **766***k* terminates with a head **763***k* larger than the remainder of the prong **766***k* and sized relative to the prong receiving aperture **761***k* so that the head **763***k* is insertable in the prong receiving aperture **761***k*, but not easily removable therefrom accidentally. For example, insertion and removal of the head **763***k* from the prong receiving aperture **761***k* may require slightly stretching or otherwise deforming the foldable material **735**.

In the attachment **722**, the arms **766** extend along the whole length of the attachment **722**. However, as seen in the alternative attachment **722**I shown in FIGS. **44** to **46**, in other embodiments, the arms **766**I of an attachment **722**I extend each along only part of the length of the attachment **722**I. In that case, more than two arms **766**I may be provided, for example two pairs of arms **766**I, one at each end of the attachment **722**I.

With the attachments **722** to **722**I, the attachments **722** to **722**I are movable relative to the foldable material **735**, and it is the configuration of the attachments **722** and **722**I and the manner in which they are inserted in the foldable material **735** that ensures that the attachments **722** to **722**I remain fixed relative to the foldable material **735**. In other embodiments, as shown below, attachments may be secured to the folding material **735** using an adhesive, stitches, a fastener or by pinching part of the folding material **735**.

Referring to FIGS. **47** to **49**, there is shown an attachment **822** similar to the attachment **722***k* in that it includes a prong **866** insertable in the prong receiving aperture **761***k* of the foldable material **735***k*, as seen in FIG. **49**. However, the attachment **822** further includes a fastener **865** or **865'** in the form of respectively a square or round washer that is insertable on the prong **866** to pinch the foldable material

735*k* between the attachment body **840** and the fastener **865** or **865'**. It should be noted that although FIG. **47** illustrates two different fasteners **865** or **865'**, typically only one of the fasteners **865** or **865'** is used, although use of both fasteners is within the scope of the invention. The fastener **865** or **865'** typically snaps in place when inserted on the head **863** so that accidental removal of the fastener **865** or **865'** from the prong **866** is unlikely.

In another embodiment, an attachment **822***a* similar to the attachment **822** and shown in FIGS. **50** to **52** includes an alternative fastener **865***a* taking the form of a panel in which an aperture **867***a* is provided, the prong **866***a* being configured to snap to the fastener **865***a* when the prong **866***a* is inserted in the aperture **877***a*. In some embodiments, the fastener **865***a* is hinged to the attachment body **840***a* so attachment of the fastener **865***a* to the prong **866***a* is facilitated.

FIGS. **53** and **54** illustrate an other alternative attachment **822***b*. In this embodiment, the foldable material **835***b*, seen in FIG. **54** and illustrated separately in FIG. **67**, is not secured to the body central portion **848***b* but to an arm **866***b* extending therefrom, using for example a fastener **865***b* in the form of a rivet. To that effect, the arm **866***b* defines an arm aperture **863***b* and a pair of rivet apertures **867***b* are provided in the inter-aperture portion **862***b* of the foldable material **835***b*. The rivet apertures **867***b* are configured and positioned so that when the attachment **822***b* is mounted to the foldable material **835***b* and the latter is folded so that the two rivet apertures **867***b* are in register with each other, the arm aperture **863***b* is in register with the rivet apertures **867***b* so that the fastener **865***b* can be inserted therethrough to secure the foldable material **835***b* to the arm **866***b*.

FIGS. **55** and **56** illustrate another attachment **822***c* similar to the attachment **822***b* except that the foldable material **835***c* does not necessarily include the rivet apertures **867***b* and the arm aperture **863***b* may be omitted. Instead, the inter-aperture portion **862***c* is secured to the arm **866***c* using for example an adhesive (not shown in FIGS. **55** and **56**) provided between the arm **866***c* and the inter-aperture portion **862***c* or stitches (not shown in FIGS. **55** and **56**) extending through both the arm **866***c* and the inter-aperture portion **762***c*. In some embodiments, a groove **869** is formed along the arm **866***c* to receive the adhesive or to provide a thinner portion of the arm **866***c* that facilitates stitching therethrough.

FIGS. **57** to **60**B illustrate yet another attachment **822***d* and FIGS. **61** to **64** illustrate yet another attachment **822***e* that use respectively one or two fasteners **865***d* and **865***e*, for example rivets. The attachments **822***d* and **822***e* both omit the arms **766** and prong **866** and are substantially C-shaped. In the attachments **822***d* and **822***e*, one or more fasteners **865***d* or **865***e* are configured and sized to engage both the attachment **822***d* or **822***e* and the foldable material **835***d* or **835***e* so that the foldable material **835***d* or **835***e* is secured to the attachment body **840***d* or **840***e* or the jaws **842***d* or **840***e*. A fastener receiving aperture **863***d* extends through the body central portion **840***d* of the attachment **822***d*. A fastener receiving aperture **863***e* extends through each of the jaws **842***e* of the fastener **822***e*. The foldable material **835***d* used with the fastener **822***d* defines a rivet receiving aperture **867***d* and the foldable material **835***e* used with the fastener **822***e* defines a pair of rivet receiving aperture **867***e*. The rivet receiving apertures **867***d* and **867***e* are positioned and configured to be in register with the fastener receiving aperture **863***d* and **863***e* when the foldable material **835***d* and **835***e* is inserted in the channel **848***d* and **848***e* of respectively the attachments **822***d* and **822***e* so that each fastener **865***d* or **865***e* can be inserted through the fastener receiving apertures **863***d* and **863***e* and the rivet receiving apertures **867***d* and **867***e* to secure the foldable material **835***d* and **835***e* to the attachments **822***d* and **822***e* when the fastener **865***d* and **865***e* is suitably locked to the attachments **822***d* and **822***e*, as seen respectively in FIGS. **60**A and **64**. It should be noted that in these embodiments, the apertures **760** may be omitted. The foldable material **835***d* and **835***e* can then be folded over the remainder of the attachment **822***d* and **822***e* as in the attachment **722**. As seen in FIG. **60**B, in other embodiments the apertures **760** are provided and the fastener **865***d* acts similarly to the prong **866**.

FIGS. **65** to **68** illustrate yet another attachment **822***f* that combines features of the attachments **822***b* and **822***a*. In the attachment **822***f*, a single arm **866***f* defining an arm aperture **869***f* extending therethrough extends from the middle of the central body portion **848***f*. A fastener **865***f* is hinged to the arm **866***f* and includes a prong **861***f* positioned for engaging and snapping to the arm aperture **869***f* when the fastener **865***f* is folded over the arm **866***f*. The rivet apertures **867***b* are positionable in register with the arm aperture **869***f* so that the prong **861***f* can extend therethrough. When the attachment **822***f* is mounted to the foldable material **835***b*, the foldable material **835***b* is pinched between the fastener **865***f* and the arm **866***f*.

FIGS. **69** to **71** illustrate yet another type of fastener **865***g* usable with an attachment **822***g* similar to the attachment **822** in which the prong **866** is omitted. Instead, the fastener **865***g* is substantially C-shaped and conforms to the shape of the body central portion **848***g* and part of the jaws **842***g*. The fastener **865***g* includes protrusions **867***g* positioned to engage correspondingly shaped recesses **863***g* formed in the jaws **842***g*. It should be noted that jaws including the protrusion and the fastener including the recess is also within the scope of the invention. The fastener **865***g* is resiliently deformable and configured to snap in place when the protrusions **867***g* are in register with the recesses **863***g*, thereby attaching the fastener **865***g* to the attachment **822***g* with the inter-aperture portion **862***g* pinched therebetween. As seen in FIGS. **72** and **73**, in other embodiments the fastener **865***h* may instead be insertable in the channel **848***h* of the attachment **822***h*, and both the attachment **822***h* and the fastener **865***h* may be substantially C-shaped, with a recessed portion present in both that engage each other to prevent undesired rotations therebetween. The attachment **822***h* works similarly to the attachment **822***d*, except that the aperture **863***d* may be omitted and replaced by a protrusion/recess pair, as in the attachment **822***g* and fastener **865***g* assembly. However, as seen in FIGS. **74** and **75**, the fastener **865***i* may be usable with the foldable material **835***d* and include a prong **867***i* inserted in a suitable positioned aperture **863***i*, In such embodiments, the prong extends through a suitable formed aperture **867***d* formed in the foldable material **835***d*.

In yet other embodiments, the foldable material is pinched between two portions of a two parts attachment body, which are then secured to each other in any suitable manner. An example of an attachment **922** using this principle is shown in FIGS. **76** to **78**. In the attachment **922**, the attachment body **940** includes attachment body first and second portions **941** and **943** from which a respective one of the jaws **942** extends. When the attachment **922** is mounted to the foldable material **935**, the body first and second portions **941** and **943** are secured to each other with at least part of the foldable material **935** contained between the body first and second portions **941** and **943**, as seen in FIG. **78**.

To that effect, the attachment body first and second portions **941** and **943** are each substantially L-shaped, with a central portion **945** corresponding to the body central portion **758**, and an arm portion **947** extending therefrom away from the jaws **942**. When the body first and second portions **941** and **943** are secured to each other, the arm portions **947** are substantially parallel and adjacent to each other and pinch the foldable material **935** therebetween. In the embodiment shown in FIGS. **76** to **78**, the arm portions **947** are secured to each other to form a hinge **949** opposed to the central portions **945**, but in other embodiments, the body first and second portions **941** and **943** are not permanently attached to each other before the attachment **922** is mounted to the foldable material **935**.

The attachment **922** is mounted to the the foldable material **935** similarly to the attachment **822***h* in that no apertures are needed in the foldable material **935**. To mount the attachment **922**, the attachment **922** is laid with the hinge **949** open, and seen in FIG. **77**, and the foldable material **935** (not seen in FIG. **77**) is laid flat on the open attachment **922**, which is then closed to achieve the configuration of FIG. **76**, which pinches the foldable material **935** between the arm portions **947**. Stitches **951**, represented schematically in FIG. **78**, passing through the arm portions **947** and the portion of the foldable material **935** pinched therebetween can then be used to secure the arm portions **947** to each other so that the foldable material **935** has a portion thereof that remains secured between the arm portions **947**. Then, the remainder of the foldable material **935** can be folded over the remainder of the attachments **922** as described hereinabove to cover the attachment **922**.

FIG. **79** illustrates yet another attachment **922***a* mounted to the foldable material **935***a* (seen in FIGS. **80** and **81**) using a similar manner, except that no stitches **951** are required and that the body first and second portions **941***a* and **943***a* are not hinged to each other. Instead the body first and second portions **941***a* and **943***a* are manufactured detached from each other and attached to each other afterwards. For example, the body first portion **941***a* defines at least one prong **952***a* (here two prongs **952***a* are defined) and the body second portion defines a corresponding number of prong receiving recesses **954***a*. When the attachment **922***a* is mounted to the foldable material **935***a*, the prongs **952***a* each engage a corresponding prong receiving recess **954***a* so that the prong **952***a* is locked in the prong receiving recess **954***a* to lock the body first and second portions **941***a* and **943***a* to each other. Such prongs and apertures are known in the art and may for example involve a prong **952***a* having a hooked free end configured to engage a ledge formed at the opening of the prong receiving recess **954***a*. When the prongs **952***a* are suitably resiliently deformed, they can enter the prong receiving recesses **954***a* until the resilient deformation is allowed to reverse due to the configuration of the prong receiving recesses **954***a*, at which point the body first and second portions **941***a* and **943***a* are joined to each other. Other types of prongs and corresponding recesses are also within the scope of the invention.

The prongs extend through a pinched portion **937***a* of the foldable material **935***a*, for example through suitably located pinched portion apertures **939***a* seen in FIGS. **80** and **81**. More specifically, a pair of pinched portion apertures **939***a* may be provided for each prong **952***a* and the foldable material **935***a* may be folded so that the pinched portion apertures **939***a* within each pair are in register with each other. The foldable material **935***a* is then positioned so that the prongs **952***a* are inserted in the pinched portion apertures **939***a* and the body second portion **943***b* may then be mounted to pinch the pinched portion **937***a* between the body first and second portions **941***a* and **943***a*. Afterwards, the foldable material **935***a* can be folded over the remainder of the attachment **922***a* as in the attachment **922**, as seen in FIG. **82**.

FIGS. **91** to **93** illustrate an attachment **922***b* that incorporates aspects of both attachment **922** and **922***a*. More specifically, a hinge **949***b* extends between substantially L-shaped body first and second portions **941***b* and **943***b*, similarly to the attachment **922**, but instead of stitches, a combination prong **952***b* and prong receiving recesses **954***b* is used to lock the body first and second portions **941***b* and **943***b* to each other. Only one prong **952***b* and prong receiving recess **954***b* pair is provided, but any other suitable number is usable. Since there is only one prong **952***b*, the foldable material **935***b* can define a single pair of suitably shaped prong receiving apertures **937***b*.

Yet another type of attachment **922***c* is seen in FIGS. **83** to **85**. The attachment **922***c* is similar to the attachment **722***g* except that it includes a resiliently deformable body central portion **948***c* allowing opening and closing of the jaws **942***c* and a lock **951***c* provided between the two jaws **942***c*. The foldable material **935***c* is not pinched by the attachment **922***c*, but defines a pair of lock receiving apertures **937***c* that receive the lock **951***c* therethrough after the foldable material **935***c* is folded over itself as in the attachment **922**. The lock **951***c* includes lock first and second portions **952***c* and **954***c* that each extend from a respective jaw and which are configured to snap to each other during the attachment **922***c* mounting process.

The above-described attachments may, in some embodiments, not require the use of glue or other adhesives to mount the attachment to the foldable material. However, in other embodiments, such an adhesive is used. As seen for example in FIG. **86** in which the attachment **722***f* is secured to the inter-aperture portion **762** using an adhesive **1000**. FIG. **86** is only one example of how an adhesive **1000** may be used to secure foldable materials to attachments and other variants are also within the scope of the invention.

Also, the above-described attachments have been described as attaching to a single piece of foldable material. However, referring to FIG. **87**, if an adhesive is used, two pieces of foldable materials **1135** may each be secured inside a respective jaw **942***a* of an attachment, for example the attachment **922***a*, using the adhesive **1000**, instead of pinching the foldable material **935***a* as described hereinabove. The foldable material **1135** is then folded over the attachment **922***a* as described hereinabove. The other attachments described herein could also be similarly adhered to the foldable material in a similar manner. In such embodiments, the foldable material **1135** exposed to the environment when used may be made of a weatherproofed material, while the foldable material **1135** provided closer to the intended user may be softer, for example made of fleece.

FIG. **89** illustrates another manner of mounting an attachment **1222**. The attachment **1222** defines a substantially flat base **1224**, which is for example rectangular, although other shapes, such as, non-limitingly, an L-shaped base **1224***a*, seen in FIG. **90** for attachment **1222***a*, is within the scope of the invention. An arcuate clip **1226** extends from the base and curves back towards the base **1224** so as to define a gap **1228** therebetween. The interior of the clip **1226** forms the channel **1248**, while the gap **1228** acts like the slit **750**. The foldable material **1235** defines a single slit **1260** receiving the clip **1226** therethrough so that the base **1224** is entirely received into a cavity defined in the foldable material **1235**, while the clip **1226** is outside of the cavity and is therefore

not covered by the foldable material **1235**. The attachment **1222** is free floating in the cavity or adhered or stitched to the foldable material **1235**.

Although the present invention has been described hereinabove by way of exemplary embodiments thereof, it will be readily appreciated that many modifications are possible in the exemplary embodiments without materially departing from the novel teachings and advantages of this invention. Accordingly, the scope of the claims should not be limited by the exemplary embodiments, but should be given the broadest interpretation consistent with the description as a whole.

What is claimed is:

1. A garment extender usable with a garment having a garment slide fastener, the garment slide fastener having a pair of substantially elongated stringer tapes supporting each a row of teeth extending longitudinally therealong, the garment slide fastener also having a slider movable along the rows of teeth in a reciprocating movement for selectively attaching the teeth of both rows to each other when moved in a closing direction and selectively detaching the teeth of both rows from each other when moved in an opening direction opposed to the closing direction, the garment extender comprising:

an extender body defining substantially opposed extender body first and second side edges and opposed extender body top and bottom edges extending each between the extender body first and second side edges;

at least two attachment mounts provided each at a respective one of the extender body first and second side edges;

at least two attachments, each mounted to a respective one of the attachment mounts, each of the attachments including an attachment body and a pair of jaws extending from the attachment body, each jaw terminating at a respective jaw free end, the jaws delimiting a channel therebetween opened at both channel ends thereof and the jaw free ends defining a slit therebetween leading to the channel, each jaw defining opposed jaw inner and outer surfaces, the jaw inner surfaces facing each other with the channel therebetween;

wherein each attachment mount includes a foldable material and the attachments are made of polymer or metal material, the attachment being mounted to the attachment mount with the foldable material running along the jaws so that the jaw inner surfaces, outer surfaces and free ends are covered by the foldable material;

wherein, with the attachments operatively secured to the garment slide fastener, the slit of each attachment receives thereinto a gripped portion of one of the stringer tapes and the channel of each attachment receives thereinto the teeth that are supported by the stringer tape adjacent the gripped portion, the foldable material being between the jaws inner surfaces and the teeth and between the stringer tapes and the jaw free ends.

2. The garment extender as defined in claim **1**, wherein the attachment body defines a body central portion from which the jaws extend, the foldable material defining a pair of apertures, an inter-aperture portion therebetween and a pair of extra-aperture portions extending away from each other from a respective one of the apertures opposed to the inter-aperture portion, the attachment being mounted to the foldable material with the body central portion inserted through both apertures, the extra-aperture portions each extending from a respective one of the apertures and covering a respective one of the jaws.

3. The garment extender as defined in claim **2**, wherein the extra-aperture portions each extend along a respective one of the jaw inner surfaces, jaw free ends and jaw outer surfaces.

4. The garment extender as defined in claim **2**, wherein a pair of arms extends from the body central portion away from the jaws, at least part of the inter-aperture portion being received between the arms.

5. The garment extender as defined in claim **4**, wherein the extra-aperture portions further extend over the attachment body and are joined to each other so that the attachments are contained in a cavity defined by the foldable material with only the body central portion protruding out of the cavity.

6. The garment extender as defined in claim **4**, wherein the arms are angled so as to converge towards each other in a direction leading away from the body central portion.

7. The garment extender as defined in claim **2**, wherein a prong extends from the body central portion opposed to the jaws, the foldable material defining a prong receiving aperture in the inter-aperture portion, the prong protruding through the prong receiving aperture.

8. The garment extender as defined in claim **7**, further comprising a fastener secured to the prong, the foldable material being secured to the prong between the body central portion and the fastener.

9. The garment extender as defined in claim **2**, further comprising a fastener, the fastener being configured and sized to engage both the attachment and the foldable material so that the foldable material is secured to the attachment.

10. The garment extender as defined in claim **2**, wherein an arm extends from the body central portion away from the jaws, at least part of the inter-aperture portion being secured to the arm.

11. The garment extender as defined in claim **1**, wherein the jaws have bevelled jaw free end portions so that the slit defines flared slit ends.

12. The garment extender as defined in claim **1**, wherein the attachment has a substantially C-shaped cross-sectional configuration in a plane substantially perpendicular to the channel.

13. The garment extender as defined in claim **1**, wherein at least one of the jaws has one of a substantially L-shaped transversal cross-sectional configuration, a substantially arcuate transversal cross-sectional configuration, or a substantially rectilinear transversal cross-sectional configuration.

14. The garment extender as defined in claim **1**, wherein the foldable material includes cloth.

15. The garment extender as defined in claim **1**, further comprising a locking clip, the locking clip defining a clip body and a locking portion extending from the clip body, the locking portion being removably insertable in the channel when the attachment is operatively attached to the garment slide fastener, whereby the locking portion increases frictional forces between the attachment mount and the garment slide fastener relative to a configuration in which the locking portion is outside of the channel.

16. The garment extender as defined in claim **1**, wherein the attachment body includes attachment body first and second portions from which a respective one of the jaws extends, the body first and second portions being secured to each other with at least part of the foldable material contained between the body first and second portions.

17. The garment extender as defined in claim **16**, wherein the body first and second portions are secured to each other

with at least part of the foldable material pinched between the body first and second portions.

18. The garment extender as defined in claim **17**, wherein the foldable material defines a pinched portion pinched between the body first and second portions and a pair of covering portion extending from the pinched portion, each of the covering portion covering a respective one of the jaws.

19. The garment extender as defined in claim **18**, wherein the body first and second portions and the pinched portion are stitched to each other.

20. The garment extender as defined in claim **16**, wherein the body first portion defines a prong and the body second portion defines a prong receiving recess, the prong engaging the prong receiving recess so that the prong is locked in the prong receiving recess to lock the body first and second portions to each other;

the prong extends through the pinched portion.

21. A garment extender usable with a garment having a garment slide fastener, the garment slide fastener having a pair of substantially elongated stringer tapes supporting each a row of teeth extending longitudinally therealong, the garment slide fastener also having a slider movable along the rows of teeth in a reciprocating movement for selectively attaching the teeth of both rows to each other when moved in a closing direction and selectively detaching the teeth of both rows from each other when moved in an opening direction opposed to the closing direction, the garment extender comprising:

an extender body defining substantially opposed extender body first and second side edges and opposed extender body top and bottom edges extending each between the extender body first and second side edges;

at least two elongated attachment mounts provided along a respective one of the extender body first and second side edges;

a plurality of attachments each mounted to one of the attachment mounts at longitudinally spaced apart locations, each of the attachments including an attachment body and a pair of jaws extending from the attachment body, each jaw terminating at a respective jaw free end, the jaws delimiting a channel therebetween opened at both channel ends thereof and the jaw free ends defining a slit therebetween leading to the channel, each jaw defining opposed jaw inner and outer surfaces, the jaw inner surfaces facing each other and delimiting the channel;

wherein, with the attachments operatively secured to the garment slide fastener, the slit of each attachment receives thereinto a gripped portion of one of the stringer tapes and the channel of each attachment receives thereinto the teeth that are supported by the stringer tape adjacent the gripped portion;

wherein each attachment mount includes a foldable material and the attachments are made of polymer or metal material, the attachment being embedded at least partially in the foldable material.

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